

KANSAS AIR QUALITY PROGRAM

CLASS I OPERATING PERMIT
APPLICATION FORMS
and INSTRUCTIONS

**Kansas Department of Health and Environment
Division of Environment
Bureau of Air and Radiation
1000 SW Jackson
Curtis Building, Suite 310
Topeka, Kansas 66612**

Phone (785) 296-6422 Fax (785) 291-3953

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GLOSSARY

This section is intended to summarize and define terminology for purposes of the Class I Operating Permit program, only. It is not intended to replace the definitions as they appear in the Rules. Rather, an attempt was made to simplify the meaning of many terms, creating working definitions. The reference appearing in parentheses () is where the complete, legal definition can be found in Kansas Rules or federal regulations.

ACFM or acfm:	Actual cubic feet per minute. This is a measurement of the rate of exhaust (volume per unit of time) from a stack, vent, emission unit or emission source.
Act (Federal):	Clean Air Act (Federal)
Actual Emissions:	The amount of pollutants which were emitted from a stationary source, emission unit, or emission source per unit of time. Actual emissions are typically less than potential-to-emit (PTE) emissions.
Administrative Permit Amendment:	Class I operating permit only: An amendment to correct typographical errors; change the company name, ownership or mailing address; require additional monitoring, record keeping, or reporting. An administrative amendment can be made by the KDHE without public notice. The source may implement the changes addressed in the request for an administrative amendment immediately upon submittal of the request (K.A.R. 28-19-513(a)(1)).
Affected Facility or Facility:	Any building, structure, machine, equipment, device, or installation, or combination thereof, to which an emissions limitation or standard applies (K.A.R. 28-19-200(a)).
Affected Source:	A stationary source that includes one or more affected units subject to emission reduction requirements or limitations under title IV of the federal clean air act, 42 U.S.C. §7401 et seq., acid deposition control (K.A.R. 28-19-200(b)).
Affected State:	Any state that is contiguous with Kansas and whose air may be affected by emissions from a stationary source or proposed stationary source in Kansas, or any state that is within 50 miles of a permitted stationary source located in Kansas (K.A.R. 28-19-200(c)).
Alternative Operating Scenarios:	Class I operating permit only: Methods of operation which trigger applicable requirements different than those listed for the base operation. These must be identified by the permittee when applying for a Class I operating permit.
Ambient Air:	The outside air.

AP-42:	A report issued by the U.S. EPA containing a compilation of air emission factors for a variety of emission units and a variety of industries. AP-42 also contains background information describing the industry or operation, and other information that may be useful. It can be found in college and university libraries, some local public libraries, KDHE district offices, and the office of the Bureau of Air and Radiation in Topeka.
Applicable Requirement:	The standards or other requirements set out in the Kansas Air Quality Regulations, the federal Clean Air Act, or the Code of Federal Regulations (including Title 40 CFR Parts 60, 61, 63, 70, 72, and 75) applicable to the source. (K.A.R. 28-19-200(e)).
Application:	The application form and all supporting documentation unless the context clearly indicates otherwise (K.A.R. 28-19-200(f)).
Application Shield:	This allows an existing source who is operating on the effective date of the regulations or who is operating under a valid permit and who submits a complete and on-time application, to continue operating prior to issuance of the permit even though the regulations require the source to have a valid permit or the source's existing permit subsequently expired. If the source fails to submit additional information when requested, the application shield will be lost.
Area Source:	A stationary source of hazardous air pollutants that is not a major source. Examples that may possibly be area sources are dry cleaning facilities, municipal land fills, and hospital sterilizers. (K.A.R. 28-19-200(g)).
BAR:	The Kansas Department of Health and Environment Bureau of Air and Radiation.
Bottleneck:	Physical or operational limitation that is part of the design of the emission facility or emission unit. Bottlenecks prevent operation of the equipment at 100% of capacity, and can be considered in PTE calculations when determining if a permit is needed.
CAA (Federal):	See Clean Air Act (Federal).
CAAA (Federal):	See Clean Air Act Amendments (Federal).
CFR:	See Code of Federal Regulations.
Class I or Class II Substance:	A substance subject to a standard promulgated under or established by Title VI of the Federal Clean Air Act, stratospheric ozone protection, 42 U.S.C. §7401 et seq. (K.A.R. 28-19-200(m)).

Class I Operating Permit:	The operating permit developed by Kansas in response to the requirements of Title V of the federal CAA and 40 CFR Part 70. (K.A.R. 28-19-500)
Class II Operating Permit:	A permit to operate an air contaminant emission stationary source as described in K.A.R. 28-19-500(b). This permit provides the mechanism to reduce the potential-to-emit of a source below the major source thresholds.
Clean Air Act (Federal):	Federal Law (Title 42 United States Code 7401 et seq.) dating back to 1970 which limits the generation of air pollution in the United States.
Clean Air Act (Federal) Amendments:	Amendments to the federal Clean Air Act, signed on November 15, 1990, which resulted in substantial changes in the federal Act. One of the changes is the Operating Permit Program, Title V.
CO:	Carbon monoxide.
Code of Federal Regulations (CFR):	These are the general and permanent rules published by the Executive departments and agencies of the federal government. The CFR is revised annually as a set of paperback books, and is available in libraries. Title 40 of the CFR contains the federal rules and regulations relating to protection of the environment.
Compliance:	The condition of acting in accordance with air quality regulations and rules, and requirements and the conditions and limitations that are outlined in an air emission permit.
Compliance Certification:	Class I operating permit only: An official statement of a stationary sources' compliance status as of the time of submitting an air emissions permit application. This certification is signed by the responsible official of the stationary source and is a legally binding document.
Compliance Group:	Fugitive emission sources, tanks, emission units, and/or insignificant activities that have been grouped together using form CD-01A to address compliance with a common applicable requirement.
Compliance Plan:	Class I operating permit only: The part of an application that will state how a stationary source will maintain compliance with all applicable requirements or, if there is noncompliance with applicable requirements, how a stationary source will come into and maintain compliance.

Compliance Schedule:	Class I operating permit only: A schedule that accompanies a permit, which defines the date-specific corrective actions that the stationary source will take to come into compliance with all applicable requirements.
Construction:	Any physical change or change in the method of operation, including fabrication, erection, installation, demolition, or modification of an emissions unit (K.A.R. 28-19-200(p)).
Control Device:	Any equipment, device or other article that is designed, installed or both for the purpose of reducing or preventing the discharge of contaminant emissions to the air (K.A.R. 28-19-200(q)).
Control Device Efficiency (CDE):	The amount of an air contaminant directed to an air emissions control device or devices (ce) minus the emissions of the air contaminant emitted from the air emissions control device or devices, or otherwise released into the atmosphere,(re), divided by the amount of the air contaminant directed to the air emissions control device or devices (ce), expressed as a two decimal number between 0.00 and 1.00 ($CDE = (ce - re)/ce$) (K.A.R. 28-19-200(r)).
Control Equipment:	As used in the Class I operating permit application and forms, control equipment includes control devices and control practices. Control efficiencies which may be used can be found in the instructions of form GI-05A .
Control Practice:	Any means of controlling fugitive emissions. An example is watering roads.
Criteria Pollutant:	Any pollutant for which a national ambient air quality standard exists: PM-10, SO ₂ , NO _x , CO, ozone (regulated as VOC), lead.
De minimis Emissions:	Air emissions of hazardous air pollutants for which no applicable requirements exist. See Table D-1 in the Appendix. (K.A.R. 28-19-200(s))
Draft Permit:	The version of the permit which is offered for public review and comment prior to issuance.
DSCFM or dscfm:	Dry standard cubic feet per minute. This is the volume of air per unit of time being exhausted from an emission unit or emission facility (acfm), corrected to account for the temperature and moisture content being different from the ambient air.

Emergency Generator:	A generator whose sole function is to provide back-up power when electric power from the local utility is interrupted. It does not include peaking units at electric utilities; generators at industrial facilities that typically operate at low rates, but are not confined to emergency purposes; and any standby generator that is used during time periods when power is available from the utility. When calculating potential-to-emit, 500 hours per year may be used as the amount of time the generator could be expected to operate under worst case conditions.
Emission Group:	Similar fugitive emission sources, tanks, or emission units that have been grouped together using form EC-01A in order to simplify emissions estimations.
Emission Limitation and Standard:	A requirement established pursuant to the Kansas air quality regulations (K.A.R. 28-19-200(w)).
Emission Source:	Any machine, equipment, device or other article or operation that directly or indirectly releases contaminants into the outdoor atmosphere (K.A.R. 28-19-200(x)). Note: A unique identifier provides cross-referencing within a Class I operating permit application and the corresponding permit. Each emission source, which is not an exempt activity, is designated on the Class I forms GI-05G through GI-05J as either an “Insignificant Activity”, “Fugitive Emission Source”, “Tank”, or “Emission Unit”.
Emission Unit:	Any part or activity of a stationary source that emits or would have the potential-to-emit any regulated pollutant or any pollutant listed under 42 U.S.C. §7412(b) of the federal clean air act (K.A.R. 28-19-200(y)). Note: For a Class I operating permit only, the term is used for an emission source that cannot be designated as an insignificant activity, a fugitive emission source, or a tank.
Exempt Activities:	Activities, not otherwise triggering any specific applicable requirement, the emission of which are beyond the scope of the permit program. Exempt activities need not be listed in the permit application.

Examples include:

Fuel use: production of hot water for on-site personal use and not related to any industrial process; and fuel use related to food preparation for consumption on the premises;

Plant upkeep and maintenance: routine housekeeping or plant upkeep activities such as grounds keeping, general repairs, cleaning, painting, welding, plumbing, retarring roofs, installing insulation, paving parking lots (provided these activities are not conducted as part of a manufacturing process, are not related to the source's primary business activity, and are

not otherwise triggering any applicable requirement), cleaning and painting activities qualify if they are not subject to VOC or HAP control requirements. Asphalt batch plant owners/operators must still get a permit if otherwise required; clerical activities such as operating copy machines and document printers, except when operating the units on a commercial basis; internal combustion engines used for landscaping purposes; repair or maintenance shop activities not related to the source's primary business activity (not including emissions from surface coating, de-greasing, or solvent metal cleaning activities); batteries and battery charging stations except at battery manufacturing plants;

Production operations: equipment used for the inspection of metal products; equipment used exclusively for forging, pressing, drawing, deburring, spinning, or extruding cold metals; equipment used exclusively to mill or grind coatings and molding compounds where all materials charged are in paste form; and mixers, blenders, roll mills, or calendars for rubber or plastics for which no materials in powder are added and in which no organic solvents, diluents, or thinners are used; brazing, soldering and welding equipment and cutting torches that do not result in emission of HAP metals; air compressors and pneumatically operated equipment, including hand tools but not including conveying or engine power sources; equipment used to mix and package, soaps, vegetable oil, grease, animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized; drop hammers or hydraulic presses for forging or metalworking; equipment used exclusively to slaughter animals, but not including other equipment at slaughterhouses, such as rendering cookers, boilers, heating plants, incinerators, and electrical power generating equipment; hand held applicator equipment for hot melt adhesives with no VOC in the adhesive formulation; batch loading and unloading of solid phase catalysts; CO₂ lasers, used only on metals and other materials which do not emit HAP in the process; paper trimmers/binders; electric or steam-heated drying ovens and autoclaves, but not the emissions from the articles or substances being processed in the ovens or autoclaves or the boilers delivering the steam; salt baths using nonvolatile salts that do not result in emissions of any regulated air pollutants; laser trimmers using dust collection to prevent fugitive emissions;

Finishing operations: closed tumblers used for cleaning or deburring metal products without abrasive blasting; and equipment for washing or drying fabricated glass or metal products, if no VOCs are used in the process, and no gas, oil, or solid fuel is burned; hand held equipment for buffing, polishing, cutting, drilling, sawing, grinding, turning or machining wood, metal or plastic;

Storage tanks: pressurized storage tanks for anhydrous ammonia, liquid petroleum gas (LPG), liquid natural gas (LNG), or natural gas; storage tanks, vessels, and containers holding or storing liquid substances that will not emit any VOC or HAP; storage tanks, reservoirs, and pumping and handling equipment of any size containing soaps, vegetable oil, grease,

animal fat, and nonvolatile aqueous salt solutions, provided appropriate lids and covers are utilized;

Wastewater collection and treatment: stacks or vents to prevent escape of sewer gases through plumbing traps, not including stacks and vents associated with processing at wastewater treatment plants;

Cleaning operations: alkaline/phosphate cleaners and associated cleaners and associated burners; janitorial services and consumer use of janitorial products; laundry activities, except for dry-cleaning and steam boilers;

Residential activities: typical emissions from residential structures, not including: (1) fuel burning equipment with a capacity of 500,000 Btu/hour or greater; and (2) incinerators;

Recreational activities: such as fireplaces, barbecue pits and cookers, and kerosene fuel use;

Health care activities: activities and equipment directly associated with the diagnosis, care, and treatment of patients in medical or veterinary facilities (not including support activities such as power plants, emergency generators, incinerators, or other units affected by any applicable requirement);

Miscellaneous: safety devices (such as fire extinguishers or emergency relief vents); fugitive dust emissions from the operation of a passenger automobile, station wagon, pickup truck, or van at the source; air-conditioning units used for human comfort that do not use a class I or class II ozone depleting substance and do not exhaust air pollutants into the ambient air from any manufacturing or other industrial process; ventilating units used for human comfort that do not exhaust air pollutants into the ambient air from any manufacturing or other industrial process; tobacco smoking rooms and areas; blacksmith forges; portable electrical generators that can be moved by hand from one location to another (moved by hand means that it can be moved without the assistance of any motorized or non-motorized vehicle, conveyance, or device); vents from continuous emissions monitors and other analyzers; natural gas pressure regulator vents, excluding venting at oil and gas production facilities; bench-scale laboratory equipment used for physical or chemical analysis, but not emissions from lab fume hoods or vents; routine calibration and maintenance of laboratory equipment or other analytical instruments; equipment used for quality control/assurance or inspection purposes, including sampling equipment used to withdraw materials for analysis; hydraulic and hydrostatic testing equipment; environmental chambers not using hazardous air pollutant (HAPs) gases; shock chambers; humidity chambers; solar simulators; process water filtration systems and demineralizers; demineralized water tanks and demineralizer vents; boiler water treatment operations, not including cooling towers; oxygen scavenging (de-aeration) of water; ozone generators; emergency road

flares; steam vents; steam leaks; steam cleaning operations, steam sterilizers; and any activity from which no regulated pollutant is emitted or directed to control equipment in quantities greater than 500 pounds per year unless total emissions of the pollutant emitted or directed to control equipment from similar activities at the stationary source exceed 2000 pounds per year.

Existing Facility:	A facility that is completed, under construction, or under purchase contract at the time an emission limitation or standard becomes applicable to such facilities (K.A.R. 28-19-200(aa)).
Federally Enforceable:	(1) All limitations and conditions that are enforceable by the administrator of the U.S. EPA; (2) requirements or regulations included in the federally approved state implementation plan; and (3) any permit requirements established pursuant to these requirements (K.A.R. 28-19-200(ee)).
Fugitive Emissions:	<p>Those emissions that directly result from operation of an emissions unit or stationary source but that could not reasonably pass through a stack, chimney, vent, or other functionally equivalent opening. (K.A.R. 28-19-200(ff)).</p> <p>Note: Examples include coal or sawdust piles, gravel roads, and outdoor VOC/HAP service valves, pumps, and flanges. Emissions from equipment (such as printing presses) in enclosed structures are not considered fugitive emissions.</p>
General Permit:	A general permit is a single permit which may be used by a number of similar sources. (K.A.R. 28-19-400)
GR/DSCF or gr/dscf:	Grains per dry standard cubic foot. This is a unit of measurement of the concentration of a pollutant in the flue or exhaust gas. There are 7000 grains in a pound.
HAP:	See Hazardous Air Pollutant.
Hazardous Air Pollutant:	<p>Shall have the meaning as defined in K.A.R. 28-19-201(a) (K.A.R. 28-19-200(gg)).</p> <p>Note: These are the pollutants regulated by section 112 of the federal CAA. There are 188 HAPs, all of which are known or thought to be toxic or carcinogenic. When completing a Class I operating permit application, use the list found in K.A.R. 28-19-201(a) or in Table D in Appendix.</p>

HON: Hazardous Organic NESHAP. These standards are found at 40 CFR Part 63.

Insignificant Activities: Class I operating permit only: Activities, listed in the Class I operating permit application form, the emissions of which need not be quantified, except to determine need for a Class I operating permit. Tanks may be designated IA if they meet the requirements for IA. After fugitive emissions, IA, and tanks (TK) have been designated, the remaining units are designated Emission Units (EU).

Insignificant Activities include:

Fuel use: space heaters fueled by natural gas, kerosene or propane.

Furnaces, boilers, and engines:

Combustion sources less than and including the sizes listed:

<u>Industrial Engines</u>	<u>Size</u>
Gasoline	50 HP
Diesel	290 HP
<u>Industrial Boilers</u>	
#5 or 6 Fuel Oil	14 gal/hr
#4 Fuel Oil	24 gal/hr
Distillate (#2 Fuel Oil)	63 gal/hr
Natural Gas	90 MM BTU/hr
Low NOx Nat. Gas	100 MM BTU/hr
Flue Gas Recirculation	100 MM BTU/hr
Butane	430 gal/hr
Propane	480 gal/hr
<u>Miscellaneous Burners</u>	
Natural Gas	90 MM BTU/hr
Butane	430 gal/hr
Propane	480 gal/hr
<u>Commercial/Residential Furnaces</u>	
#5 or 6 Fuel Oil	14 gal/hr
#4 Fuel Oil	24 gal/hr
Distillate (#2 Fuel Oil)	63 gal/hr
<u>Emergency Generators</u>	
Gasoline	900 HP
Industrial Diesel	5100 HP
Large Stationary Diesel	6600 HP
Large Stationary Dual Fuel	8800 HP

Fabrication operations: equipment used exclusively for forging, pressing, drawing, spinning, or extruding hot metals.

Finishing operations : open tumblers with a batch capacity of 1,000 pounds or less.

Storage tanks: fuel oil (including diesel fuel) storage tanks with a batch capacity of 10,000 gallons or less.

Cleaning operations: commercial laundries and associated burners, not including dry cleaners.

Emissions from a laboratory, if:

- (1) the research and development activities do not make significant contributions to the product of a major manufacturing facility and
- (2) laboratory activities which involve environmental and quality assurance/quality control sample analysis, when aggregated with the research and development activities, are below the Insignificant Emission Levels listed below.

Miscellaneous:

- 1) degreasing solvent usage that does not exceed 250 gallons per 12 months;
- 2) equipment used exclusively for packaging lubricants or grease;
- 3) equipment used for hydraulic or hydrostatic testing;
- 4) brazing, soldering or welding equipment;
- 5) blueprint copiers and photographic processes;
- 6) equipment used exclusively for melting or application of wax; and
- 7) nonasbestos equipment used exclusively for bonding lining to brake shoes.

**Insignificant
Emission Levels:**

Class I operating permit only: Insignificant emission levels include those from emissions units which have a potential-to-emit less than or equal to the following and for which no specific applicable requirement exists. Insignificant emission units do not require quantification on the Class I Application form EC-01.

- 1) one hundred (100) tons per year of carbon monoxide;
- 2) forty (40) tons per year of nitrogen oxides;
- 3) forty (40) tons per year of sulfur dioxide;
- 4) fifteen (15) tons per year of PM10 emissions;
- 5) forty (40) tons per year of volatile organic compounds; or
- 6) 0.6 tons per year of lead.

K.A.R.:	The Kansas Administrative Regulations.
KDHE:	Kansas Department of Health and Environment or an authorized representative of the department.
MACT:	Maximum Achievable Control Technology. These standards are found at 40 CFR Part 63.
Major Source:	<p>A stationary source that has the potential-to-emit 10 or more tons per year of any one HAP or 25 or more tons per year total of all HAPs or that has the potential-to-emit 100 or more tons per year of any regulated air pollutant. Fugitive emissions must be included when determining whether a class I operating permit is required if the stationary source is a federally designated fugitive emissions source as defined at K.A.R. 28-19-200(dd). (K.A.R. 28-19-200(kk)).</p> <p>Note: This definition applies to the Class I Operating Permit only.</p>
Material Safety Data Sheets:	Documents that provide all the information about a chemical substance, including ingredients, health and environmental hazards, flammability, safety precautions, etc. MSDSs are available for all chemical substances from the supplier of the material.
MSDS:	See Material Safety Data Sheets.
NAAQS:	National Ambient Air Quality Standards.
NAICS:	<hr/> <p>North American Industry Classification System. The NAICS code is a numerical indicator of the primary type of activity at a business. The NAICS was developed as an improvement over the SIC code (see SIC in this glossary) with a 6 digit code. The first two digits indicate the broad category; the last four digits are more specific. For example, 424510 are grain and field bean merchant wholesalers; 324121 is asphalt paving mixture and block manufacturing. NAICS codes may be found on the internet at http://www.osha.gov/oshstats/naics-manual.html.</p>
NESHAP:	National Emission Standards for Hazardous Air Pollutants. These standards are found at 40 CFR Part 61.
New Facility/Source:	A facility or source that is constructed or installed after the date a regulation becomes effective (usually pertaining to PSD or NSPS).
New Source Performance Standards:	These are source category-specific standards for emission of air pollutants that must be met by certain sources constructed or modified after a certain date. This is required by section 111 of the federal CAA, and is outlined in the Code of Federal Regulations, Title 40, Part 60.

Non-attainment Area:	A geographical area that does not meet National Ambient Air Quality Standards for one or more criteria pollutants.
Noncompliance:	The condition of not being in compliance with applicable rules and regulations or permit conditions.
NOV (Notice of Violation):	A formal notice to a facility of violations of rules and regulations. It requests corrective actions, and can be considered part of a facility's past history in subsequent enforcement actions.
NO_x:	Nitrogen Oxides.
NSPS:	See New Source Performance Standards.
NSR:	New Source Review.
Opacity:	The degree to which a contaminant emission obscures an official observer's view of transmitted light passing through that contaminant. Zero percent opacity is perfect transparency, and 100 percent is impenetrable to light (K.A.R. 28-19-200(pp)).
Operating Permit:	A permit to operate a source. These can be Class I or Class II. (K.A.R. 28-19-500) Kansas issues air construction permits and air operating permits separately though the two may be processed simultaneously. Upon written request of the applicant, and as approved by the KDHE, procedural requirements for an operating permit may be considered satisfied if accomplished during the construction permit process. (K.A.R. 28-19-502)
Owner or Operator:	Any person who owns, leases, operates, controls, or supervises an affected facility, emissions unit or stationary source subject to any standard or requirement of the Kansas air quality act, K.S.A. 65-3001 et seq., or any rule and regulation promulgated thereunder (K.A.R. 28-19-200(ss)).
P2:	See pollution prevention.
Part 70:	U.S. EPA's regulations stating the requirements a state operating permit program must meet in order for the state to implement Title V. These requirements are found in the Code of Federal Regulations, 40 CFR Part 70.
Permit Shield:	A condition in a permit, stating that if the source is in compliance with the terms of the permit, that it shall be considered being in compliance with the applicable rule or regulation. The permit shield only applies if and where the permit specifically states that it applies. (K.A.R.28-19-512(b))

PM:	Particulate Matter.
PM10:	Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (K.A.R. 28-19-200(vv)).
Pollution Prevention:	A program by which processes are operated in a manner to reduce the amount of pollution generated.
Potential-To-Emit (PTE):	The maximum capacity of a stationary source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant, including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed, shall be treated as part of its design if the limitation or the effect it would have on emissions is federally enforceable. Secondary emissions shall not be considered in determining the potential-to-emit of a stationary source. (K.A.R. 28-19-200(yy)).
PSD:	Prevention of Significant Deterioration. (40 CFR 52.21)
RACT:	Reasonably Available Control Technology. In Kansas, these are the special VOC standards which apply in Johnson and Wyandotte counties. The GI-09 application form lists the RACT source categories.
Regulated Pollutant:	<ol style="list-style-type: none"> 1) CO, SO₂, NO_x, PM10, VOC (Ozone), Lead; 2) NSPS (federal designated pollutants): Total Reduced Sulfur, H₂S, sulfuric acid mist, Fluorides; 3) Hazardous Air Pollutant (HAPs)(K.A.R. 28-19-200(gg)) - [Table D in Appendix]; 4) Stratospheric Ozone-Depleting Substance (Class I and Class II Substances) - [Table B in Appendix]; 5) Federal Clean Air Act Section 112(r)(3) Toxic or Flammable Substances - [Table F in Appendix]; and 6) Synthetic Organic Chemical Manufacturing Industry Chemicals - [Table G in Appendix]. <p>Note: Some pollutants may be subject to more than one regulatory requirement (e.g., some federal HAPs are also regulated as Section 112(r)(3) substances).</p>
Renewal:	Class I operating permit only: The process of reissuing an operating permit. The maximum term of a Class I operating permit is five years from the date of issuance except for those issued for a solid waste incineration unit combusting municipal waste, subject to standards under section 129(e) of the federal clean air act which may have a maximum term of 12 years.

**Responsible
Official:**

Means one of the following:

- (1) For a corporation, a president, secretary, treasurer, or vice-president in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production, or operating facilities applying for or subject to permit or other relevant regulatory requirement and if either:
 - (A) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million, in second quarter, 1980 dollars; or
 - (B) the delegation of authority to such representative is approved in advance by the department;
- (2) for a partnership or sole proprietorship, a general partner or the proprietor, respectively;
- (3) for a municipality, or a state, federal, or other public agency, a principal executive officer or ranking elected official. For purposes of this definition, a principal executive officer of a federal agency shall include the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency; or
- (4) for affected sources, the designated representative under title IV of the federal clean air act, "acid deposition control." (K.A.R.28-19-200(ccc))

Rolling Average:

Sometimes used as a calculation method for showing compliance with a permit limit. For example, to calculate the "12 month rolling average" for operating hours, each month you would add together the operating hours for the 12 months immediately prior to the current month and divide by 12.

Rolling Sum:

Sometimes used as a calculation method for showing compliance with a permit limit. For example, to calculate the "12 month rolling sum" for operating hours, each month you would add together the operating hours for the 12 months immediately prior to the current month.

**Secondary
Emissions:**

Emissions that would occur as a result of the construction or operation of a major stationary source or major modification, but do not come from the major stationary source or major modification itself. Secondary emissions shall include emissions from any off-site support facility that would not be constructed or increase its emissions except as a result of the construction or operation of the major stationary source or major modification. Secondary emissions shall not include any emissions that come directly from a mobile source, such as emissions from the tailpipe of a motor vehicle, from a train, or from a vessel (K.A.R. 28-19-200(ddd)).

SIC:

Standard Industrial Classification. The SIC code is a numerical indicator of the primary type of activity at a business. For example, 5153 is a

grain elevator; 2951 is an asphalt plant. The first two digits indicate the broad category, the second two digits are more specific. The SIC system was created to serve as the structure for the collection, aggregation, presentation, and analysis of the U.S. economy. SIC codes may be found in the Standard Industrial Classification Manual, 1987 and on the internet at http://www.osha.gov/pls/imis/sic_manual.html.

SO₂

Sulfur dioxide.

**Specific
Applicable
Requirement:**

Any applicable requirement other than the following:
K.A.R. 28-19-20 through K.A.R. 28-19-26, processing operation emissions;
K.A.R. 28-19-30 through K.A.R. 28-19-32, indirect heating equipment emissions;
K.A.R. 28-19-650, opacity requirements;
K.A.R. 28-19-69, cutback asphalt;
K.A.R. 28-19-70, leaks from gasoline delivery vessels and vapor collection systems;
K.A.R. 28-19-72, gasoline dispensing facilities;
40 CFR part 60, subpart AAA, standards of performance for new residential wood heaters;
40 CFR 61.145, national emissions standard for asbestos, standard for demolition and renovation;
K.A.R. 28-19-750, hazardous air pollutants, if the source is an area source.

**Stationary
Source or source:**

Any building, structure, facility, or installation that emits or may emit any air pollutant subject to any emission limitation or standard or that is required to obtain a permit pursuant to the Kansas air quality regulations (K.A.R.28-19-200(iii)).

Threshold:

A level of emissions that will initiate the permitting process should potential emissions from a facility reach or exceed it.

Title V:

The section (42 U.S.C. 7401, *et seq.*) of the federal Clean Air Act that requires the operating permit program.

USEPA:

United States Environmental Protection Agency, or its successor (K.A.R.28-19-200(III)).

**Volatile organic
compounds
(VOC):**

Shall have the meaning as defined in K.A.R. 28-19-201(b) (K.A.R. 28-19-200(mmm)).

GI-01 Source Information

Note: Any non-major source or any area source required to obtain a Class I operating permit should contact Bureau of Air and Radiation (BAR) prior to completing this application. There may be reduced requirements for your application and a reduced application fee.

- 1) **Source ID No.** -- Fill in the 7-digit source ID number (previously referred to as the permit number) that KDHE has requested to be used when corresponding with the Bureau of Air and Radiation (BAR). If the source has never been issued an air emission permit before, leave this line blank.
- 2) **Site Name** - Enter the site's designated name.
- 3) **Type of Class I Permit** - Indicate the type of class I permit requested. All first-time class I applicants should check "initial".
- 4) **Source Location** - Fill in the official street address, city, and county where the source is located. Indicate the section, township, and range if a street address for the source is unavailable or is not descriptive of the location. Also provide a mailing address.
- 5) **Corporate/Company Owner** - Fill in the owner's name and mailing address.
- 6) **Corporate/Company Operator (if different from owner)** - The operator runs the source on a day-to-day basis. If a separate company operates the source, indicate its name here. If not applicable, indicate "N/A".
- 7) **Responsible official for this permit/source** - Fill in the name, title, phone number and fax number (if available) of the responsible official. For the purpose of this form, the responsible official must be a person meeting the criteria for signing the application [defined in K.A.R. 28-19-200(ccc) and in the glossary].
- 8) **Contact-person for this permit** - Fill in the name, title, phone number and fax number (if available) of the individual to whom the permit and other permitting correspondence should be sent. Indicate which address applies to this person by checking the appropriate box, or complete "other" if it has not been listed previously.
- 9) **Standard Industrial Classification (SIC) Code and description for the source** - Fill in the primary (and secondary and tertiary if applicable) 4-digit SIC code(s) for the source. A single stationary source may have more than one SIC code. For example, a source which makes and prints on cardboard boxes would have a primary SIC code of 2653. If the source does some of its own printing on-site, it would have a secondary SIC code of 2759. If the source has more than one SIC, use the primary SIC to determine the permit application deadline.

SIC codes may be found on the internet at:

http://www.osha.gov/pls/imis/sic_manual.html

Additional SIC information may be obtained from Standard Industrial Classification

Manual, 1987 edition. Copies of this manual can be ordered from the National Technical Information Service, 5285 Port Royal Road, Springfield, Virginia 22161 (order number PB 87-1000012).

- 10) Primary product produced (or activity performed) at the source** - Indicate the primary product or activity at the source's business.
- 11) North American Industry Classification System (NAICS) Code and description for the source** - Fill in the primary (and secondary and tertiary if applicable) 6-digit NAICS code(s) for the source. A single stationary source may have more than one NAICS code.

NAICS codes may be found on the internet at:

<http://www.osha.gov/oshstats/naics-manual.html>.

- 12) Are any alternative operating scenarios proposed in this permit application?** - Place a check in either the "yes" or "no" box. (Note: It may be necessary to complete the rest of the application before knowing the answer to this question.) If yes, attach a description of the proposal with copies of the basic forms affected by the operating change, noting information no longer applicable and addressing new information applicable to the alternative operating scenarios.

- 13) List pollutants for which the source is major:**

List all regulated pollutants for which the potential-to-emit of the source is above the major source thresholds. List each individual hazardous air pollutant that has a potential-to-emit above 10 tons/year. Write "Combined HAPs" in the list if a combination of HAPs exceeds 25 tons/year.

The regulated pollutants are:

- 1) CO, SO₂, NO_x, PM₁₀, VOC (Ozone), Lead;
- 2) NSPS (federal designated pollutants): Total Reduced Sulfur, H₂S, sulfuric acid mist, Fluorides;
- 3) Hazardous Air Pollutant (HAPs) - (K.A.R. 28-19-200(gg)), [Table D in Appendix];
- 4) Stratospheric Ozone-Depleting Substance (Class I and Class II Substances) - [Table B in Appendix];
- 5) Federal Clean Air Act Section 112(r)(3) Toxic or Flammable Substances - [Table F in Appendix]; and
- 6) Synthetic Organic Chemical Manufacturing Industry Chemicals - [Table G in Appendix];

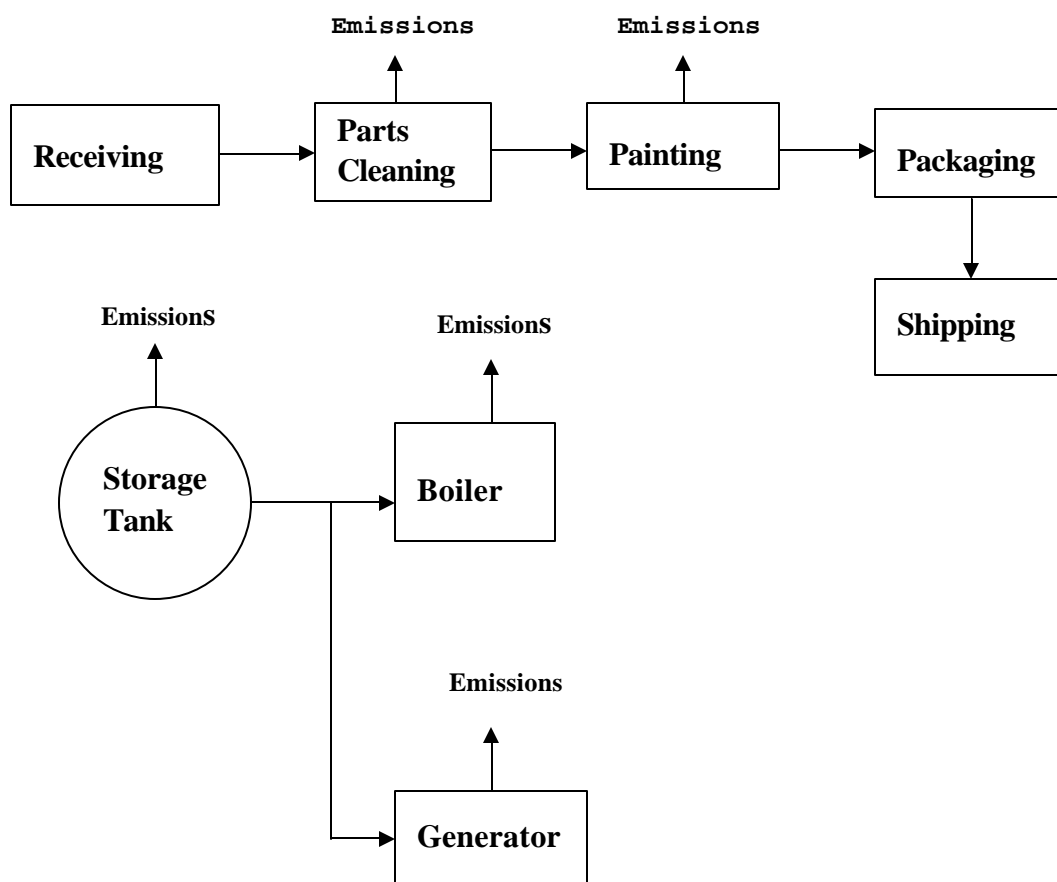
- 14) Permit limitations to reduce PTE:** -- If the source has accepted or proposed permit limitations in order to reduce potential-to-emit of any regulated pollutants to below major source thresholds, list those pollutants in the space provided.
- 15) Brief description of the source or proposed source to be permitted** - Describe the primary business activity of the source and the processes which emit regulated pollutants into the air.

INSTRUCTIONS FOR FILLING OUT KANSAS CLASS I PERMIT APPLICATION FORM

GI-02A Process Flow Diagram

- 1) **Source ID No.** --Enter the 7-digit source ID No. of this source as indicated on the *Source Information Form (GI-01)*, item 1.
- 2) **Flow Diagram** -- To produce a complete flow diagram, start by showing all processes. Show the flow pathway of materials into each process. Examples include fuel into a boiler or a conveyor feeding a rock crusher. Show the pathway of air emissions from each process. Use this form or attach another drawing. If another drawing or additional sheets are included in the application package, include the source ID number in the upper right hand corner of each additional drawing or sheet.

Example:

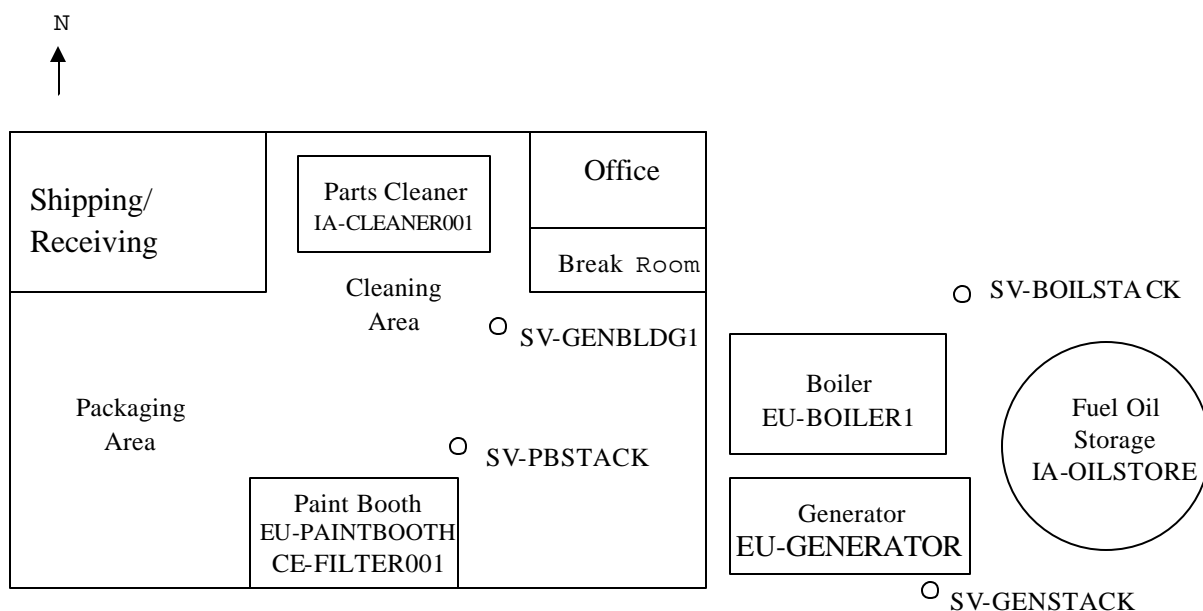


INSTRUCTIONS FOR FILLING OUT KANSAS CLASS I PERMIT APPLICATION FORM

GI-02B Site Diagram

- 1) **Source ID No.** --Enter the 7-digit source ID No. of this source as indicated on the *Source Information Form (GI-01)*, item 1.
- 2) **Site Diagram** -- Provide a plan view diagram of the site showing all buildings. Complete the **GI-05** series of forms. Return to this form and using the IDs assigned in the **GI-05** series of forms, label each piece of control equipment, each emission unit, each insignificant activity, each stack/vent (emitting any regulated pollutant other than emissions from exempt activities)*, each fugitive emission source, and each tank. Use this form or attach a separate drawing. If a separate drawing or additional sheets are submitted, include the source ID number in the upper right hand corner of each additional drawing or sheet.

Example:



* Showing the location of steam vents is not required, although doing so may prove to be a helpful reference for sources with a large number of vents.

GI-05A Pollution Control Equipment Information

The following types of Control Equipment¹ (CE) need to be listed on this form:

- a) CE required by an applicable requirement.
- b) CE required by a construction permit.
- c) CE used to comply with a federally enforceable condition.
- d) CE used to demonstrate compliance with an applicable requirement (e.g., equipment operating during a stack test).
- e) CE used in the potential-to-emit calculations.

- 1) **Source ID No.** -- Enter the 7-digit source ID No. of this source as indicated on the *Source Information* Form (GI-01), item 1.
- 2a) **Control Equipment (CE) ID** -- Assign a suffix (up to ten letters and/or numbers) that when combined with "CE" will form a Control Equipment ID for each piece of pollution control equipment listed (e.g., "CE-FILTER001" for a fabric filter). The assigned ID will be used in other forms to identify control equipment that is described in this form. This ID is unique to this piece of equipment and must be used consistently throughout the application.
- 2b) **Control Equipment (CE) Type Code** -- Fill in the appropriate Control Equipment (CE) Type Code from Table GI-05A.1 pages 20 and 21. For control equipment that is not listed in Table GI-05A.1, enter the CE Type Code "099" and then describe the equipment in column 2c). The type code for the control equipment must be entered correctly, since this will be the primary means of recording and identifying the type of air pollution control equipment at this source.
- 2c) **Description (if CE type is 99)** -- Describe the appropriate control equipment or control practice description if CE Type Code 099 was entered in column 2b).
- 2d) **Pollutants Controlled** -- The pollutants to be addressed are: PM₁₀, Particulate HAPs, SO_x, NO_x, VOCs, Gaseous HAPs, CO, and lead (Pb). Fill in the pollutants controlled. HAPs should be categorized and addressed as "particulate HAPs" or "gaseous HAPs" for the purposes of this form. If multiple pollutants are controlled, list each pollutant separately. For example, if a wet scrubber is used to control both PM₁₀ and SO_x emissions, complete columns 2e) and 2f) for each pollutant. It is not necessary to duplicate the other information in the other columns (i.e., Control Equipment (CE) ID, Control Equipment (CE) Type Code, etc.).
- 2e) **Capture Efficiency** -- Fill in the capture efficiency of the control equipment. The capture efficiency is the portion of the pollutants routed to the control equipment (e.g., a fabric filter). For emission units in which all of the pollutants are routed to a control device the capture efficiency is 100%. These devices are called total enclosures.

Hoods and other devices that do not completely surround the emissions from an emission

¹Control Equipment includes Control Practices - see Glossary.

unit do not capture all of the pollutants and therefore have a capture efficiency that is less than 100%. For these, the capture efficiency is 50% unless a higher number is established by an applicable requirement or has been demonstrated by the source and approved by KDHE.

- 2f) Collection/Destruction Efficiency** -- Fill in the collection or destruction efficiency. The collection or destruction efficiency is that percentage of the pollutants entering the control equipment that are collected by the control equipment or that are destroyed by the control equipment and thus removed from the exhaust stream. The “VOCs; Gaseous Haps” collection/destruction efficiencies may be used for HAPs which are gaseous. The “PM10; Particulate HAPs” collection/destruction efficiencies may be used for HAPs which are particulates.

For purposes of Class I Operating Permits only, the collection/ destruction efficiencies stated in Table GI-05A.1 may be used unless the pollution control equipment was used to demonstrate compliance with an applicable requirement. For pollution control equipment used to demonstrate compliance with an applicable requirement, the demonstrated collection/ destruction efficiency must be used. Manufacturer’s data (if it is the best data available) or performance test data on control equipment efficiency may be used in lieu of Table GI-05A.1.

Return to form **GI-02B** (*Site Diagram*) and label any pollution control equipment with the ID assigned on this form.

Table GI-05A.1 Control Equipment (CE) Type Codes and Collection/Destruction Efficiencies

Note: For purpose of **Class I operating permits only**, the Collection/Destruction efficiencies in this table may be used to estimate potential-to-emit without creating an enforceable limitation. [See paragraph 2f earlier in this instruction]

CE Code	Control Equipment	Collection/Destruction Efficiency (%)					
		PM10; Particulate	HAPs SOx	NOx	VOCs; Gaseous HAPs	CO	Pb
001	Wet scrubber, high eff.	90	75	---	---	---	72
002	Wet scrubber, med. eff.	25	60	---	---	---	20
003	Wet scrubber, low eff.	20	30	---	---	---	16
004	Gravity collector, high eff.	4	---	---	---	---	3
005	Gravity collector, med. eff.	3	---	---	---	---	2
006	Gravity collector, low eff.	2	---	---	---	---	1
007	Centrifugal collector (cyclone), high eff.	80	---	---	---	---	64
008	Centrifugal collector (cyclone), other eff.	50	---	---	---	---	40
010	Electrostatic precipitator, high eff.	95	---	---	---	---	76
011	Electrostatic precipitator, med. eff.	80	---	---	---	---	64
012	Electrostatic precipitator, low eff.	70	---	---	---	---	56
013	Gas scrubber (general)	---	70	70	70	70	---
014	Mist eliminator (v > 250 ft/min), high vel.	10	70	---	---	---	8
015	Mist eliminator (v < 250 ft/min), low vel.	5	50	---	---	---	4
016	Fabric filter	99	---	---	---	---	79
019	Catalytic afterburner	---	---	---	90	90	---
021	Direct flame afterburner	---	---	---	94	99	---
023	Flaring	---	---	---	90	95	---
024	Modified furnace or burner design	---	---	20	---	---	---
025	Staged combustion	---	---	20	---	---	---
026	Flue gas recirculation	---	---	20	---	---	---
027	Reduced combustion - air preheat	---	---	20	---	---	---
028	Steam or water injection	---	---	20	---	---	---
029	Low excess - air firing	---	---	10	---	---	---
030	Fuel w/low nitrogen content	---	---	10	---	---	---
034	Wellman-Lord/sodium sulfite scrubbing	---	50	---	---	---	---
035	Magnesium oxide scrubbing	---	50	---	---	---	---
036	Dual alkali scrubbing	---	50	---	---	---	---
037	Citrate process scrubbing	---	50	---	---	---	---
038	Ammonia scrubbing	---	50	---	---	---	---
039	Cat. Oxidation - flue gas desulfurization	---	75	---	---	---	---
040	Alkalized alumina	---	75	---	---	---	---
041	Dry limestone injection	---	40	---	---	---	---
042	Wet limestone injection	---	80	---	---	---	---
043	Sulfuric acid plant - contact process	---	50	---	---	---	---
044	Sulfuric acid plant - double contact process	---	95	---	---	---	---
045	Sulfur plant	---	85	---	---	---	---
047	Vapor recovery system (Including condensers, hoods, other enclosures)	---	---	---	85	---	---
048	Activated carbon adsorption	---	---	---	85	---	---
049	Liquid filtration system	50	---	---	---	---	40
050	Packed-gas absorption column	90	70	70	70	70	72
051	Tray-type gas absorption column	25	70	70	70	70	20
052	Spray tower	20	70	70	70	70	16
053	Venturi scrubber	90	70	70	70	70	72

Table GI-05A.1 (Continued)

CE Code	Control Equipment	Collection/Destruction Efficiency (%)					
		PM10; Particulate HAPs	SOx	NOx	VOCs; Gaseous HAPs	CO	Pb
055	Impingement plate scrubber	25	---	---	---	---	20
056	Dynamic separator (dry)	90	---	---	---	---	72
057	Dynamic separator (wet)	50	---	---	---	---	40
058	Mat or panel filter	92	---	---	---	---	74
059	Metal fabric filter screen (cotton gins)	10	---	---	---	---	8
060	Process gas recovery	---	---	---	95	99	---
061	Effective dust suppression by water spray	40	---	---	---	---	32
062	Effective dust suppression by chemical stabilizers or wetting agents	40	---	---	---	---	32
064	Annular ring filter	80	---	---	---	---	64
065	Catalytic reduction	---	---	75	---	---	---
066	Molecular sieve	---	---	95	---	---	---
067	Wet lime slurry scrubbing	---	50	---	---	---	---
068	Alkaline fly ash scrubbing	---	50	---	---	---	---
069	Sodium carbonate scrubbing	---	50	---	---	---	---
070	Sodium-alkali scrubbing	---	50	---	---	---	---
071	Fluid bed dry scrubber	10	---	---	---	---	8
075	Single cyclone	10	---	---	---	---	8
076	Multiple cyclone w/o fly ash reinjection	80	---	---	---	---	64
077	Multiple cyclone w/ fly ash reinjection	50	---	---	---	---	40
085	Wet cyclone separator	50	---	---	---	---	40
086	Water curtain	10	---	---	---	---	8
090	Federally Approved Leak Detection Program ^{2,3}	()	()	()	()	()	()
099	Other control equipment or pollution control practices ³	()	()	()	()	()	()

² Emission factors vary - use industry specific guidance.

³ Attach supporting documentation for efficiencies claimed.
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GI-05G Insignificant Activities and Emission Levels Information

Do not include Exempt Activities on this form (see “Exempt Activities” in the Glossary for details). Lists showing Insignificant Activities and Insignificant Emission Levels can also be found in the Glossary.

- 1) **Source ID No.** - Enter the 7-digit source ID number as indicated on the *Source Information Form (GI-01)*, item 1.
- 2a) **Insignificant Activity ID** - Assign a suffix (up to ten letters and/or numbers) that when combined with “IA” will form an ID for all insignificant activities or activities whose emissions do not exceed insignificant emission levels (e.g., “IA-CLEANER001”). The IDs used on this form must be consistent with those used on the *Site Diagram Form (GI-02B)*.
- 2b) **Description** -- Provide a brief description of all activities at the source that are found on the List of Insignificant Activities or are below insignificant emission levels. Provide enough detail in the description so it is clear that the emission unit(s) at the source meets the definition of an insignificant activity. For example, the List of Insignificant Activities found in the glossary includes storage tanks with a batch capacity of not more than 10,000 gallons. If the source has fuel oil storage tanks that meet this definition, indicate the capacity of each tank to show that it is not more than 10,000 gallons.
- 2c) **Stack/Vent ID** -- Assign IDs to the stacks and vents associated with each insignificant activity/emission level consistent with those on the *Site Diagram (GI-02B)*, and the *Stack/Vent Diagram (GI-06)*. It is important to use these IDs consistently throughout the application. For multiple stacks or vents from the same emission unit, use one row for each stack/vent. Do not assign more than one stack/vent ID to any stack or vent.
- 2d) **Control Equipment ID** -- Provide the ID of each piece of air pollution control equipment associated with each insignificant activity. This ID must match that assigned on the *Pollution Control Equipment Information Form (GI-05A)*.

Return to form **GI-02B** and label all insignificant activities or activities operating below insignificant emission levels with the ID assigned on this form.

INSTRUCTIONS FOR FILLING OUT KANSAS CLASS I PERMIT APPLICATION FORM

GI-05H Fugitive Emission Source Information

Fugitive emissions are air emissions **outside of buildings** which cannot reasonably pass through a stack, chimney, vent or other equivalent opening. Examples of fugitive emission sources include coal or sawdust piles, gravel roads, and outdoor VOC/HAP service valves, pumps, and flanges. **Emissions inside a building that do not pass through a stack are not fugitive emissions.** These emissions should be assigned to a building vent and reported as stack/vent emissions on the appropriate **GI-05** form.

- 1) **Source ID No.** -- Enter the 7-digit source ID No. of this source as indicated on the *Source Information* Form (**GI-01**), item 1.
- 2a) **Fugitive Emission Source ID** -- Assign a suffix (up to ten letters and/or numbers) that when combined with "FS" will form an ID for each fugitive emission source (e.g., "FS-COALPILE1"). Similar emission units may be grouped together and given a common ID if appropriate (for example, for VOC/HAP service valves, flanges, pumps, etc.). The IDs used on this form must be consistent with any references to Fugitive Source IDs on other forms.
- 2b) **Pollutant Emitted** -- Enter any regulated fugitive pollutant(s) emitted (e.g., PM-10, VOC, HAPs).
- 2c) **Description of the Fugitive Emission Source** -- In general, emissions vented through control equipment are not fugitive emissions. Describe the fugitive emission source in sufficient detail to identify it (e.g., coal stockpile, road from mine to North Crusher).
- 2d) **Control Equipment ID** -- Provide the ID of each air pollution control practice associated with each fugitive emission source. This ID must be the same as that assigned on the *Pollution Control Equipment Information* Form (**GI-05A**).

Return to form **GI-02B** (*Site Diagram*) and label the fugitive emission sources with the IDs assigned on this form.

INSTRUCTIONS FOR FILLING OUT KANSAS CLASS I PERMIT APPLICATION FORM

GI-05I Tank Information

- 1) **Source ID No.** -- Enter the 7-digit source ID No. of this source as indicated on the *Source Information* Form (**GI-01**), item 1.
- 2a) **Tank ID** -- Assign a suffix (up to ten letters and/or numbers) that when combined with "TK" will form an ID for each tank (e.g., "TK-FUELTANK1"). It may be helpful to group tanks according to area, process, or contents. It is important to use these IDs consistently throughout the permit application.
- 2b) **Control Equipment ID** -- If emissions from the tank are directed to a control device (e.g., a condenser, a flare, or a thermal oxidizer), provide the ID of that piece of control equipment here. This ID must match that assigned on the *Pollution Control Equipment Information* Form (**GI-05A**).
- 2c) **Material(s) Stored** - List types of material historically stored or anticipated to be stored in the tank.
- 2d) **Capacity (x 1000 gal.)** - List the maximum capacity of the tank (in thousands of gallons). Be sure to convert to thousands of gallons before writing in the capacity. For example, for a 40,000 gallon tank, fill in "40." Use the following conversion factors:
- | | |
|--------------------|-----------------|
| 1 cubic foot | = 7.481 gallons |
| 1 liquid barrel | = 31.5 gallons |
| 1 petroleum barrel | = 42.0 gallons |
- 2e) **Construction Type** -- Fill in the number for the type of construction from the following list:
1. External floating roof
 2. Internal floating roof
 3. Fixed roof
 4. Pressure tank
 5. Variable vapor space
 6. Underground
 7. Other.

Return to form **GI-02B** and label any tanks with the ID assigned on this form.

INSTRUCTIONS FOR FILLING OUT KANSAS CLASS I PERMIT APPLICATION FORM

GI-05J Emission Unit Information

Use this form to describe emission units other than insignificant activities, fugitive emission sources, and tanks. Separate forms are provided for insignificant activities and emission levels (**GI-05G**), fugitive emission sources (**GI-05H**), and tanks (**GI-05I**).

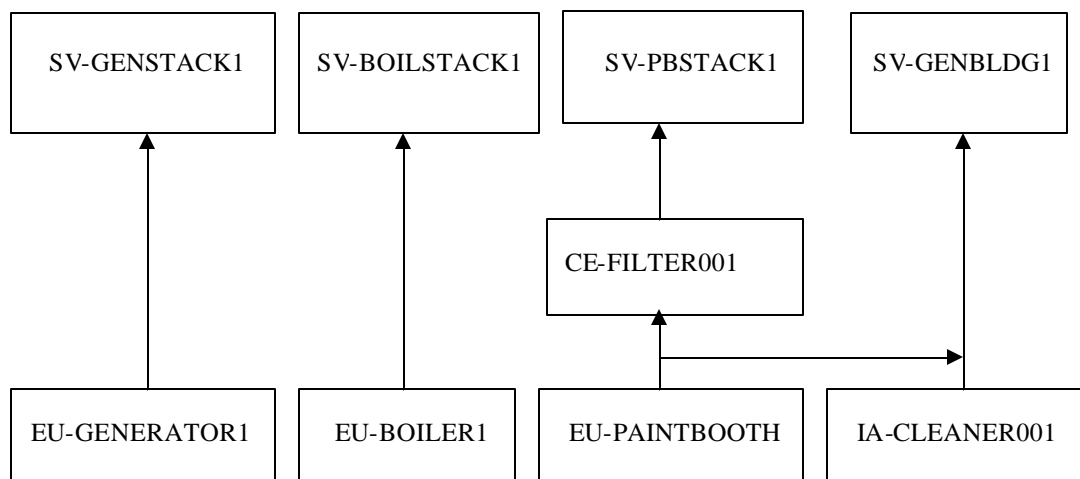
- 1) **Source ID No.** -- Enter the 7-digit source ID No. of this source as indicated on the *Source Information* Form (**GI-01**), item 1.
- 2a) **Emission Unit ID** -- Assign a suffix (up to ten letters and/or numbers) that when combined with "EU" will form an ID for each emission unit (e.g., "EU-BOILER1"). The ID of each emission unit must be the same as that shown on the *Site Diagram* Form (**GI-02B**).
- 2b) **Emission Unit Description** - Provide a description sufficient to identify this emission unit at the source, for example, "Boiler", "Heatset Web Press."
- 2c) **Stack/Vent ID** -- Assign IDs to the stacks and vents associated with each emission unit consistent with those on the *Site Diagram* (**GI-02B**) and the *Stack/Vent Diagram* (**GI-06**). It is important to use these IDs consistently throughout the application. For multiple stacks or vents from the same emission unit, use one row for each stack/vent. Do not assign more than one stack/vent ID to any stack or vent.
- 2d) **Control Equipment ID** -- Provide the ID of each piece of air pollution control equipment associated with each emission unit. This ID must match that assigned on the *Pollution Control Equipment Information* Form (**GI-05A**).

Return to form **GI-02B** (*Site Diagram*) and label all emission units and all stack/vents with the ID assigned on this form.

GI-06 Stack/Vent Diagram

- 1) **Source ID No.** -- Enter the 7-digit source ID No. of this source as indicated on the *Source Information Form (GI-01)*, item 1.
- 2) **Stack/Vent Diagram** -- Show the associations among all emission units, insignificant activities, stack/vents* (including general building vents), and control equipment. All emissions of regulated pollutants must be accounted for. The IDs must be consistent with the IDs assigned in the **GI-05 series of forms**. Use form **GI-06** or attach another drawing. If another drawing or additional sheets are included in the application package, include the source ID number in the upper right hand corner of each additional drawing or sheet.

Example:



*Any tank on site is assumed to vent directly to atmosphere and thus does not need to be shown on this diagram. If this is not the case (for example, emissions directed to a control device), then the path of the tank emissions needs to be shown on this diagram.

EC-01 Emission Calculation

- 1) **Source ID No.** -- Enter the 7-digit source ID No. of this source as indicated on the *Source Information* Form (**GI-01**), item 1.
- 2a) **Emission Source or Emission Group ID** - Each emission ID previously recorded on Forms **GI-05H**, **GI-05I**, or **GI-05J** must also be recorded on either **EC-01** or **EC-01A**. *In no case should any emission source be listed more than once.* Similar emission sources emitting the same pollutants may be grouped for purposes of estimating emissions. If emission sources are to be grouped, proceed to form **EC-01A** to assign emission group IDs before completing this form.
- 2b) **Pollutant** -- Fill in the name of each regulated pollutant emitted from the emission source or emission group. The pollutants to be addressed are: PM₁₀, SO_x, NO_x, CO, lead (Pb), VOCs, HAPs, and Combined HAPs.
- 2c) **Potential-to-Emit (tons/yr) [estimated]** -- If an emission source is subject to a federally enforceable emission limitation which restricts the unit from operating at its maximum capacity or otherwise restricts the PTE of the unit, the source may take this into account in calculating the PTE.

For sources with an emergency generator, see “Emergency Generator” in the Glossary for information about calculating the PTE for such a unit.

If a number of emission sources are combined into an emission group using form **EC-01A**, the PTE for the group is the combined PTE of all emission sources in the group. Grouping of sources will *not* result in additional requirements becoming applicable to an emission source.

The source may use greater than (>) or less than (<) major source thresholds in this column unless the source has the potential-to-emit (PTE) of a regulated pollutant at a level below which a requirement would become applicable. *Numerical values are only required if it is necessary to demonstrate that a requirement triggered by an emission level is not applicable.*

Major source thresholds:

Individual HAPs - 10 tons per year

Combined HAPs - 25 tons per year

Other regulated pollutants - 100 tons per year

Review the examples on the following pages before completing this form:

1. If *any* HAP or combination of HAPs were listed in response to question 12) on form **GI-01** (source *is* a major HAP source):

Show in the category of “Individual HAPs” whether the potential-to-emit (PTE) of the highest HAP in each individual source of emissions is < or > 10 tons per year, and for “Combined HAPs” whether the PTE is < or > 25 tons per year.

Example Source:

PTE (tons/yr) -

Emission Source	PM10	SOx	NOx	CO	Lead	VOCs	HAPs (Benzene)	HAPs (Toluene)	HAPs Misc.	Combined HAPs
EU-PROCESS1			110	105		16	11	2	1	14
TK-STORAGE						14	4	2	1	7
EG-FINISH						3		1	1	2
TOTAL	0	0	110	105	0	33	15	5	3	23

Thus, pollutants for which the source is major: **NOx, CO, Benzene**

How to Complete EC-01:

1) Source ID No.: 1234567

2a) Emission Source or Emission Group ID	2b) Pollutant	2c) Potential-to-Emit (tons/yr)	2d) Calculation Method (CM) Code	2e) Calculation Method Description (if CM code is 99)
EU-PROCESS1	NOx	> 100	010	
	CO	> 100	010	
	VOCs	< 100	020	
	Indiv. HAPs	> 10	020	
	Combined HAPs	< 25	020	
TK-STORAGE	VOC	< 100	020	
	Indiv. HAPs	< 10	020	
	Combined HAPs	< 25	020	
EG-FINISH	VOC	< 100	020	
	Indiv. HAPs	< 10	020	
	Combined HAPs	< 25	020	

2. If no HAP or combination of HAPs were listed in response to question 12) on form **GI-01** (source *is not* a major HAP source):

Determine which HAP (if any) has the highest potential-to-emit for the entire facility. For each individual emission source, show the numeric value, in tons per year, of the potential-to-emit of that specific HAP, if greater than 0.

For each individual emission source, show the numeric value, in tons per year, of the Combined HAPs potential-to-emit, if greater than 0.

Example Source:

PTE (tons/yr) -

Emission Source	PM10	SOx	NOx	CO	Lead	VOCs	HAPs (Benzene)	HAPs (Toluene)	HAPs Misc.	Combined HAPs
EU-PROCESS1			110	105		8	5	2	1	8
TK-STORAGE						7	4	2	1	7
EG-FINISH						3		2	1	3
TOTAL	0	0	110	105	0	18	9	6	3	18

Thus, pollutants for which the source is major: **NOx, CO**

How to Complete EC-01:

1) Source ID No.: 1234567

2a) Emission Source or Emission Group ID	2b) Pollutant	2c) Potential-to-Emit (tons/yr)	2d) Calculation Method (CM) Code	2e) Calculation Method Description (if CM code is 99)
EU-PROCESS1	NOx	> 100	010	
	CO	> 100	010	
	VOCs	< 100	020	
	HAPs (Benzene)	5	020	
	Combined HAPs	8	020	
TK-STORAGE	VOC	< 100	020	
	HAPs (Benzene)	4	020	
	Combined HAPs	7	020	
EG-FINISH	VOC	< 100	020	
	Combined HAPs	3	020	

2d) Calculation Method (CM) Code -- Fill in the code number from the following list:

Emission Factor Method:

- 010 -- Emission Factor Method - AP-42
- 012 -- Emission Factor Method - Source Classification Code (SCC)
- 014 -- Emission Factor Method - Manufacturer's Data
- 016 -- Emission Factor Method - Stack Testing

The Emission Factor Method calculates PTE by multiplying an emission factor (EF) times the maximum rated capacity of the emission source (MRC) times the number of hours in a year (8760):

$$\text{PTE} = \text{EF} \times \text{MRC} \times 8760$$

Material Balance Method:

- 020 -- Material Balance

Computer Program Method:

- 030 -- API/EPA TANKS Program
- 032 -- GRI-GLYCalc Program

Other Method:

- 099 -- Other

2e) Calculation Method Description (if CM code is 99) -- If PTE calculation method code in column 2d) is 099, describe the method used in this column.

EC-01A Emission Group Information

Similar emission sources emitting the same pollutants may be grouped when estimating emissions. The purpose of this form is to assign emission group IDs when grouping emission sources. An example of grouped items would be two or more spray painting booths.

- 1) **Source ID No.** - Enter the 7-digit source ID No. of this source as indicated on the *Source Information* Form (**GI-01**), item 1.
- 2a) **Emission Group ID** - Assign a suffix (up to ten letters and/or numbers) that when combined with “EG” will form an Emission Group ID for similar emission sources *emitting the same pollutants* (e.g. “EG-3PAINTBTHS”).
- 2b) **Emission Source ID** - Identify all emission sources that make up each emission group that was assigned in 2a). Each emission source ID must match the IDs previously assigned on forms **GI-05H**, **GI-05I**, and/or **GI-05J**.

CD-01 Compliance Plan and Certification

The *Determination of Applicable Requirements* Form (**GI-09**) identifies all requirements that apply to the source. By filling out the *Compliance Plan and Certification* Form (**CD-01**) the source will explain how it intends to demonstrate compliance with the requirements. These requirements are called *applicable requirements* and they are the foundation of the Compliance Plan and Certification.

When filling out the Form **CD-01** make sure that any limits proposed in the application are addressed. For example, if the source is requesting federal enforceable permit limitations, describe the specific limits, monitoring, record keeping, and reporting practices that the source will follow to demonstrate that the source is operating in compliance with the proposed permit limitations. The source must remember to include on Form **CD-01** a plan to demonstrate and maintain each destruction/collection efficiency of emission control equipment the source proposes on Form **GI-05A** or Form **EC-01**. Furthermore, if the source is proposing alternative operating scenarios in the application, the source must complete a separate compliance plan that describes how it intends to demonstrate compliance for each applicable requirement under the proposed alternative operating scenario.

Compliance Plan and Certification Form (**CD-01**) requires the source to organize the compliance plan based on how different portions of the source are affected by the applicable requirements the source identified in the *Requirements* Form (**GI-09**). Form **CD-01** requires that all applicable requirements to be listed on the form. Therefore, the source will probably find that more than one form is needed to cover the entire facility. For example, in the drawing below, a source has five emission units that are subject to three applicable requirements. Emission units 1-3 are subject to applicable requirement A, emission units 1-5 are subject to applicable requirement B, and emission units 4 and 5 are subject to applicable requirement C. Emission sources subject to the same applicable requirement can be grouped under a common ID number (e.g. CG-1) if the method for demonstrating compliance is the same. Once it is determined which portions of the source have applicable requirements in common, proceed to form **CD-01A** to assign compliance group ID numbers.

Group #1: CG-1	Group #2: CG-2	Group #3: CG-3
Emission unit #1	Emission unit #1	Emission unit #4
Emission unit #2	Emission unit #2	Emission unit #5
Emission unit #3	Emission unit #3	
	Emission unit #4	
	Emission unit #5	
Applicable Requirement A	Applicable Requirement B	Applicable Requirement C

- 1) Source ID No.** -- Enter the 7-digit source ID No. of this source as indicated on the *Source Information* Form (**GI-01**), item 1.

- 2a) **Emission Source or Compliance Group ID** -- Similar emission sources having the same requirement may be grouped when certifying compliance. Enter the emission source ID or compliance group ID in this column. Emission source numbers referenced must match those used on forms **GI-05G, GI-05H, GI-05I, or GI-05J**, and compliance group numbers must match those on Form **CD-01A**.
- 2b) **Citation** -- Cite the rule, regulation, or other regulatory basis of the applicable requirement for the emission source or group identified in 2a). Citations of state and federal rules and regulations must be to a sufficient level of detail to show that the source clearly understands exactly what parts of a regulation apply to the source. In general, a rule or regulation has an overall designation or number. Key points in the rule or regulation will also have an accompanying letter or number designation. The following is an example of how to properly cite a regulation:

Example: Assume a source operates a steam generating boiler subject to New Source Performance Standard (NSPS) subpart Dc as adopted at K.A.R. 28-19-720 and the only fuel for the boiler is oil. Look at the portion of the standard reprinted below. One of the citations required to be provided on **CD-01** would be the part of the standard that limits the boiler's emissions of sulfur dioxide (SO₂). The proper citation to be entered on **CD-01** is 40 CFR 60.42c(d). The source would not cite the portions of the regulation that apply to boilers that burn coal.

40 CFR 60, Subpart Dc: Standard of Performance for Small Industrial-Commercial Institutional Steam Generators > 10 MM Btu but < 100 MM Btu.

§ 60.42c Standard for sulfur dioxide.

(a) Except as provided in paragraphs (b), (c), and (e) of this section, on and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part whichever date comes first the owner the operator of an affected **facility that combusts only coal** shall neither: (1) cause to be discharged into the atmosphere..

(b) Except as provided in paragraphs (c) and (e) of this section, on and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first the owner or operator of an affected facility that:

- (1) **Combusts coal refuse** alone in a fluidized bed combustion steam generating unit shall...
- (2) **Combusts only coal** and that uses an emerging technology for the control of SO₂ emissions shall ...

(c) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part whichever date comes first, no owner or operator of an affected facility that **combusts coal**, alone or in combination with any other fuel.

(d) On and after the date on which the initial performance test is completed or required to be completed under § 60.8 of this part, whichever date comes first, no owner or operator of an affected **facility that combusts oil** shall cause to be discharged into the atmosphere from that affected facility any gases that contain SO₂ in excess of 215 ng/J (0.50 lb/million Btu) heat input; or, as an alternative, **no owner or operator of an affected facility that combusts oil shall combust oil in the affected facility that contains greater than 0.5 weight percent sulfur.** The percent reduction requirements are not applicable to affected facilities under this paragraph.

The source must provide specific citations for all requirements (e.g., monitoring, record keeping, reporting) found in the rules or regulations that apply to some or all of the source. Keep in mind that often there is no specific rule or regulation that requires a specific compliance demonstration method. For example, if the source is proposing a permit limit to keep the source from being subject to a certain regulation, the source is required to propose a compliance demonstration method for it in **CD-01**. Whenever there is no specific rule or regulation to cite in this column, describe why a compliance demonstration method is proposed (e.g., permit conditions to limit VOC emissions to less than 250 tons per year under 40 CFR 52.21).

- 2c) Applicable Requirement** -- Describe the requirement(s), compliance demonstration methods, and any other conditions associated with the citation listed in column 2b). Using the example above, the limit required by 40 CFR 60.42c(d) would be entered in this column in this way: "Sulfur content of oil: no more than 0.5 percent by weight." In addition to requirements, most air quality rules and regulations include specific monitoring, testing, record keeping, and operation and maintenance requirements. The Compliance Plan must include the compliance demonstration requirements that are included in the rule or regulation that applies to the items listed on this form. Remember that for each compliance demonstration method required by a rule or regulation, the source must provide a specific regulatory citation. If there is no specific rule or regulation mandating a specific compliance demonstration method (e.g., permit limits), the source must propose practices that are appropriate for the source. The minimum standard for compliance demonstration methods should be maintenance procedures recommended by the manufacturer.
- 2d) Compliance Status** -- Indicate whether the emission source or compliance group identified in column 2a) is in compliance or out of compliance with the applicable requirement on the date of submission of this permit application. Form **CD-03** must be completed for each emission source or compliance group which is not in compliance with an applicable requirement.
- 2e) How is compliance status to be demonstrated?** -- State methods used for determining compliance, including a description of monitoring, recordkeeping, and reporting requirements and test methods.
- 2f) Certification Reporting Schedule** -- The emission sources or groups listed on this form require compliance reporting. Indicate the applicable requirement(s) and the certification reporting schedules. A report certifying that these emission sources or groups are in compliance with applicable requirement listed in 2b) is to be submitted to KDHE on an annual basis except for those which have a more frequent certification reporting schedule specified by the underlying applicable requirement or KDHE.
- 2g) Subject to Enhanced Monitoring Rule?** -- Enter "Yes" if the requirement is subject to the federal Enhanced Monitoring rule, and "No" if it is not. *(Note: The Enhanced Monitoring rule has not yet become law. Until it does become law, leave this column blank. After the rule is promulgated, the source will be asked to provide information regarding enhanced monitoring at the source.)*

CD-01A Compliance Group Information

Emission sources having the same requirement and the same compliance status may be grouped when certifying compliance. The purpose of this form is to assign compliance group IDs when grouping these sources.

- 1) **Source ID No.** -- Enter the 7-digit source ID No. of this source as indicated on the *Source Information* Form (**GI-01**), item 1.
- 2a) **Compliance Group ID** -- Assign a suffix (up to ten letters and/or numbers) that when combined with “CG” will form a Compliance Group ID for emission units having the same requirement.
- 2b) **Emission Source ID** -- List the IDs of all fugitive emission sources, tanks, emission units, or insignificant activities in the group identified in 2a). These IDs must match the IDs previously assigned on forms **GI-05G**, **GI-05H**, **GI-05I**, and **GI-05J**.

CD-03 Compliance Schedule

Submit a compliance schedule with the permit application if, on the date of application, the source is out of compliance with any applicable requirement. **Complete one CD-03 Form for each such occurrence of non-compliance to an applicable requirement.** All applicable requirements are identified from Form **GI-09**. The compliance status for each applicable requirement (on the date the application is signed) has previously been listed on the Form **CD-01** (*Compliance Plan and Certification*). The compliance schedule must include a date-specific sequence of corrective actions which will cause the source to come into compliance with all applicable requirements. The corrective action must be enforceable, meaning that adherence to the schedule can be monitored in practical terms through appropriate record keeping, monitoring, and/or reporting practices. The schedule also must promote compliance achievement within the shortest reasonable period of time. Note that while progress is being made on the compliance schedule, the source must also continue to operate in accordance with the compliance plan outlined in Form **CD-01**.

The compliance schedule must also include a proposed time frame for submitting progress reports. These reports must be submitted at least semi-annually (every six months). Any portion of the schedule which has not been achieved as of the date of permit issuance will be made a part of the operating permit. Once proposed, the compliance schedule is enforceable. Responsibility for compliance with the proposed conditions commences when the application is submitted.

- 1) **Source ID No.** --Enter the 7-digit source ID No. of this source as indicated on the *Source Information* Form (**GI-01**), item 1.
- 2) **Site Name** -- Enter the name of this source matching that indicated on the *Source Information* Form (**GI-01**), item 2.
- 3) **Non-Compliant Emission Source or Compliance Group ID:** -- Fill in the emission source ID or compliance group ID which is out of compliance on the date this permit application is submitted.
- 4) **Applicable Requirement Reference:** State the applicable requirement that is out of compliance matching the reference cited on Form **CD-01**, column 2c). Examples: "KAR 28-19-31(b)(2)", "NSPS Subpart Dc - 40 CFR 60.42c(d)", "Construction Permit Condition."
- 5) **Describe non-compliance and actions to be taken to bring into compliance:** Describe the noncompliant situation including a summary of the corrective action necessary to bring it into compliance.
- 6) **Milestones or Intermediate Steps** -- Provide all milestones or intermediate steps leading to compliance. The date of completion is to be estimated if the step or milestone has not been completed on the date of submission of this permit application.

In those situations where a source is subject to an applicable requirement but cannot be in compliance because a rule has not been finalized by a regulatory agency, state under h) "other", that the source will comply with the requirement when the rule is promulgated.

- 7) **Progress Report Schedule** -- Progress reports must be certified and submitted to KDHE. Provide a schedule for submission of these reports no less frequently than every six (6) months following the date the permit application is signed.

Progress reports are not necessary for any case in which the source cannot be in compliance because a rule has not been finalized by a regulatory agency.

In addition to requirements to which the source is out of compliance as identified on Form CD-01, identify all requirements that will become applicable to the source during the permit term. See the section “Applicable Requirements That Will Become Effective During Permit Term” from the *Determination of Applicable Requirements* Form **GI-09**.

INSTRUCTIONS FOR FILLING OUT KANSAS CLASS I PERMIT APPLICATION FORM

ME-01 Continuous Monitoring System Information

Continuous Monitoring Systems (CMS) are used to measure pollutants or operating parameters associated with emission units and/or pollution control equipment. For the purposes of the *Continuous Monitoring System Information Form (ME-01)*, a continuous monitor is considered a CMS only if it has an associated Data Acquisition System (DAS). A DAS is typically either a mechanical data collection device or an electronic data collection device. **A system by which data is manually recorded is not considered a CMS in this form.** CMS include Continuous Emission Monitors (CEMS), Continuous Opacity Monitors (COMS), and Continuous Parameter Monitors (CPMS). CEMS monitor pollutant emissions such as sulfur dioxide, nitrogen oxides, and volatile organic compounds. COMS measure the opacity (visible emissions) from an emission point. CPMS measure operating parameters such as flow-rate, pressure drop, temperature, and steam production.

CMS are typically used to demonstrate compliance with emission limits. Some facilities are required by regulation to monitor using a CMS (e.g., certain New Source Performance Standards sources and Acid Rain Program affected units) while in other cases a CMS may be proposed by the permit applicant as an appropriate method for monitoring compliance when monitoring is needed but is not dictated by regulation. If the source does or plans to utilize a CMS, Form **ME-01** must be filled out. Provide information available on the date of submission of the application.

Provide the following information regarding each existing or proposed CMS used to demonstrate compliance at the source. Be sure to include all diluent CEMS (e.g., O₂, CO₂ monitors). The source should be aware that a particular CMS may need to be listed in more than one row. For example, if a CMS monitors more than one emission unit, a separate row of the table must be filled out for each unit that the CMS monitors. Likewise, if a CMS monitors more than one pollutant, a row of the table must be filled out for each pollutant that the CMS monitors.

- 1) **Source ID No.** -- Enter the 7-digit source ID No. of this source as indicated on the *Source Information Form (GI-01)*, item 1.
- 2a) **CMS ID** -- Enter a suffix (up to ten letters and/or numbers) that when combined with "CMS" will form a Continuous Monitoring Systems ID (e.g. CMS-MONITOR1").
- 2b) **Emission Source ID** -- Fill in this box with the emission source (i.e. insignificant activity, emission unit, group, or tank) IDs or pollution control equipment IDs that corresponds to the CMS listed in the row (one emission source ID per row). **Note:** Use the unique ID that has already been assigned in the previous application forms (e.g. For a particular piece of control equipment, identify it on this form with the **same** ID assigned on form **GI-05A**).
- 2c) **CMS Existing or Proposed? (E or P)** -- If a CMS is installed and operational, indicate that it is "existing" by entering an "E". If the CMS has not been installed and become operational as of the date of this application, indicate that it is "proposed" by entering a "P".

2d) Data Storage Medium -- Provide information indicating how the CMS data is stored (electronically, paper tape, or some other means).

2e) Parameter(s) Monitored -- Indicate which parameter the CMS is or will be monitoring (e.g., SO₂, NO_x, flow, steam, etc.). If a CMS monitors more than one parameter (e.g., a SO₂ and NO_x monitor), fill out a separate row of the table for each parameter monitored. It is not necessary to repeat information that would duplicate the previous row (i.e., CMS ID, Emission Source ID, etc.).

2f) Span Value (ppm, etc.) -- (CEMS and COMS only)

CEMS - For gas monitors, span value means the upper limit of a gas concentration measurement range (in ppm). Span value is specified for certain NSPS affected source categories in the applicable subpart of the regulations. When span values are not specified, calculate the span value by multiplying the gas concentration in ppm that corresponds approximately to the proposed emission limit by 1.5 and fill the result in this column.

COMS - For opacity monitors, the span value is the opacity value at which the COMS is set to produce the maximum data display output (measured in percent opacity) as specified in the applicable subpart. Refer back to the rule or regulation that required the installation of the COMS in order to determine the actual span value for a particular COMS. In cases where there is no span value specified in the applicable regulations, a span value equivalent to 1.5 multiplied by the emission limit is appropriate.

2g) System Full-Scale Value (ppm, etc.) -- Full-Scale means the highest measurement that the data acquisition system can read and record for a particular parameter. The DAS must record in units of the standard (e.g., pounds per million BTU, pounds per hour, gallons per minute, inches of water, etc.).

2h) CMS Certification Date -- (CEMS/COMS only) If a CMS has been certified supply the **test date**. If a CMS has not been certified as of the date of this permit application, write in "NA".

2i) By-Pass Capability (Y/N)? -- (All CMS) Indicate whether or not there is a capability to bypass the monitor. For example, is there an "emergency" stack that allows the source to vent the flue gases before they reach the CMS? Indicate "yes" or "no."

INSTRUCTIONS FOR FILLING OUT KANSAS CLASS I PERMIT APPLICATION FORM

MOD-01 Modification Description

This form is used only if the source has submitted the initial application. The purpose of this form is to describe a modification to be made to the application after submittal of the initial application.

- 1) **Source ID No.** -- Enter the 7-digit source ID No. of this source as indicated on the *Source Information Form (GI-01)*, item 1.
- 2) **Site Name** -- Enter the name of this source matching that indicated on the *Source Information Form (GI-01)*, item 2.
- 3) **Description** -- Provide a description of each physical and operational change included in this application for modification. Physical changes include installation, replacement, or change to emission sources. Examples include adding an additional boiler, removing one boiler and installing a new one in its place, and replacing a burner on a boiler with one of higher capacity or with one which can burn a different fuel. Physical changes include changes which may not always be apparent from a visual inspection, such as changing the catalyst in a chemical reactor.

Operational changes include any type of change a source can make which might increase emissions and which do not involve a physical change as described above. Examples of operational changes include changing solvents, which may increase VOC or HAP emissions, or using a different chemical in the production of a product for which the equipment is already in place. Increasing hours of operation or production rate is not an operational change unless there is an existing permit condition which limits the hours of operation or production rate.

Debottlenecking - The installation of a new emission unit or a change to an existing unit may have the effect of allowing other emission units at the facility to operate at a higher capacity. This is called **debottlenecking** if the bottleneck was previously taken into consideration when calculating the potential-to-emit of the other emission units. Describe how the capacity of these other units will increase if debottlenecking occurred.

Determine if the change results in an increase in emissions. Also determine whether the modification subjects the emission unit to a New Source Performance Standard (NSPS, 40 CFR part 60), a National Emission Standard for Hazardous Air Pollutants (NESHAP, 40 CFR part 61), the Prevention of Significant Deterioration (PSD, 40 CFR 52.21), and/or a MACT standard (40 CFR part 63).

Include a complete Form **(GI-01)** indicating if the application being updated or corrected is an initial application or a renewal application. Mark the modification box on Form **(GI-01)**. Attach each form in the application which is updated or modified. The original and two copies of the modified application including Form **(MOD-01)** must be submitted.

CR-01 Certification

Source ID No. -- Enter the 7-digit source ID No. of this source as indicated on the *Source Information Form (GI-01)*, item 1.

Site Name -- Enter the name of this source matching that indicated on the *Source Information Form (GI-01)*, item 2.

The certification must be signed by a responsible official [defined in K.A.R. 28-19-200(ccc)], who is the person who performs policy or decision making functions for the company. It is recommended that the responsible official not sign the certification until the application is complete and ready to be submitted.

Fill in the 7-digit source ID number (previously referred to as the permit number) that KDHE has requested to be used when corresponding with the Bureau of Air and Radiation (BAR). If the source has never been issued an air emission permit before, leave this line blank.

Source ID Number: _____

The following is a list of all class I operating permit application forms. In the blank by each form, enter the number of times that form is used in this operating permit application package. Enter "0" if that form is not used in this application package.

Application Fee

An application pertaining to a class I operating permit shall not be deemed complete unless accompanied by the appropriate fee [K.A.R. 28-19-516]. K.A.R. 28-19-516 (c) provides an application fee credit may be claimed by a source which also pays an annual emission fee. Contact the Bureau of Air and Radiation if the credit applies. Check the amount of application fee included in this permit application.

- _____ \$1,000 for initial application
- _____ \$1,000 for renewal application
- _____ \$500 for application for a significant modification
- _____ Annual emission fee credit claimed

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Kansas Department of Health and Environment
Bureau of Air and Radiation
1000 SW Jackson, Suite 310, Topeka KS 66612-1366
Phone (785) 296-6422 Fax (785) 291-3953

CLASS I OPERATING PERMIT
APPLICATION FORM **GI-01**
SOURCE INFORMATION

-
- 1) Source ID Number: _____
- 2) Site Name: _____
- 3) Type of Class I Permit: Initial _____ Modification _____ Renewal _____
- 4) Source Location: County: _____
- Street Address: _____
- City: _____ State: KS
- or Section: _____ Township: _____ Range: _____
- Mailing Address: _____
- City: _____ State: _____ Zip: _____
- 5) Corporate/Company Owner:
- Name: _____
- Mailing Address: _____
- City: _____ State: _____ Zip: _____
- 6) Corporate/Company Operator (if different than owner):
- Name: _____
- Mailing Address: _____
- City: _____ State: _____ Zip: _____
- 7) Responsible official for this permit/source:
- Name: _____ Phone: _____
- Title: _____ Fax: _____
- At (check one): Owner Address _____ Operator Address _____ Source Address _____
- Other (specify) _____
- 8) Contact person for this permit:
- Name: _____ Phone: _____
- Title: _____ Fax: _____
- At (check one): Owner Address _____ Operator Address _____ Source Address _____
- Other (specify) _____
- E-mail Address: _____
- 9) Standard Industrial Classification (SIC) Code and description for the source:
- Primary: _____
- Other (if applicable): _____
- 10) Primary product produced (or activity performed) at the source: _____
- _____

Source ID Number: _____

11) North American Industry Classification System (NAICS) Code and description for the source:

Primary: _____

Other (if applicable): _____

12) Are any alternative operating scenarios proposed in this permit application?

Yes _____ No _____

If yes, attach a description of the proposal with copies of the basic forms affected by the operating change, notated as to information no longer applicable and noting new information applicable to the alternative operating scenarios.

13) List pollutants for which the source is major:

14) List pollutants for which the source has accepted or proposed permit limitations in order to reduce potential-to-emit to below major source thresholds:

15) Brief description of the source or proposed source to be permitted (attach additional sheets if necessary):

**Kansas Department of Health and Environment
Bureau of Air and Radiation**

**CLASS I OPERATING PERMIT
APPLICATION FORM **GI-02A**
PROCESS FLOW DIAGRAM**

-
- 1) Source ID No.: _____
 - 2) Process Flow Diagram:

**Kansas Department of Health and Environment
Bureau of Air and Radiation**

**CLASS I OPERATING PERMIT
APPLICATION FORM **GI-02B**
SITE DIAGRAM**

-
- 1) Source ID No.: _____
 - 2) Site Diagram:

1) Source ID No.: _____

2a) Control Equipment (CE) ID	2b) Control Equipment (CE) Type Code	2c) Description (if CE type is 99)	2d) Pollutants Controlled	2e) Capture Efficiency	2f) Collection /Destruction Efficiency
CE-					
CE-					
CE-					
CE-					
CE-					
CE-					
CE-					
CE-					
CE-					
CE-					
CE-					
CE-					
CE-					
CE-					
CE-					

DUPLICATE THIS FORM AS NEEDED

INSIGNIFICANT ACTIVITIES AND EMISSION LEVELS INFORMATION

1) Source ID No.: _____

[illegible]

DUPLICATE THIS FORM AS NEEDED

1) Source ID No.: _____

2a) Fugitive Emission Source ID	2b) Pollutant Emitted	2c) Description of Fugitive Emission Source	2d) Control Equipment ID
FS-			
FS-			
FS-			
FS-			
FS-			
FS-			
FS-			
FS-			
FS-			
FS-			
FS-			
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DUPLICATE THIS FORM AS NEEDED

**Kansas Department of Health and Environment
Bureau of Air and Radiation**

**CLASS I OPERATING PERMIT
APPLICATION FORM **GI-05I**
TANK INFORMATION**

1) Source ID No.: _____

2a) Tank ID	2b) Control Equipment ID	2c) Material(s) Stored	2d) Capacity (x 1000 gal.)	2e) Construction Type
TK-				
TK-				
TK-				
TK-				
TK-				
TK-				
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DUPLICATE THIS FORM AS NEEDED

**CLASS I OPERATING PERMIT
APPLICATION FORM GI-05J
EMISSION UNIT INFORMATION**

[illegible]

Form GI-05J Page 1 of 1

**Kansas Department of Health and Environment
Bureau of Air and Radiation**

**CLASS I OPERATING PERMIT
APPLICATION FORM **GI-06**
STACK/VENT DIAGRAM**

-
- 1) Source ID No.: _____
 - 2) Stack/Vent Diagram:

DETERMINATION OF APPLICABLE REQUIREMENTS

Source ID Number: _____

Standards of Performance for New Stationary Sources

Read through the source category list of New Source Performance Standards (NSPS) in Table A. If an affected facility has been modified (as defined in 40 CFR 60.14), reconstructed (as defined in 40 CFR 60.15) or constructed on or after the effective date listed in the table, it may be subject to requirements of NSPS. To make the final determination, refer to the corresponding 40 CFR part 60 subpart. Submit corresponding application forms for each NSPS emission unit. Some non-major sources are also required by the applicable requirement to obtain a class I operating permit.

- ☐ Yes, the following subparts apply (e.g., NSPS subparts D, K, etc.):

Complete the CD forms to address all applicable requirements.

- ☐ Yes, the source is a non-major source which is required to obtain a class I operating permit.
Contact BAR if the answer to this question is yes.
- ☐ No, NSPS regulations do not apply to this source.

CFC (Stratospheric Ozone)

(40 CFR 82 and 1990 CAAA §601-618)

If the source manufactures, sells, distributes or uses any of the Class I and Class II ozone-depleting substances identified in the 1990 CAAA (see Table B), then CAAA §601-618 may apply.

- ☐ Yes, the source DOES manufacture, sell, distribute or use the following chemicals:

Chemical Name	Class Type	Replacement Chemical (after phase out)

- ☐ No, the source does NOT manufacture, sell, distribute or use any chemicals from the list.

Acid Rain (Phase I and II Facilities)

(40 CFR 72, 40 CFR 73, and 1990 CAAA §401-416)

An affected source is required to get a Class 1 operating permit. A source which is designated as a Phase I or Phase II source under Title IV of the 1990 CAAA (see Table C) is an affected source.

An electrical generating unit which commenced operation after 11/15/90, sells electricity, and is not operating under a new unit exemption is an affected source.

An electrical generating unit that, after 11/15/90, serves a generator unit with a nameplate capacity greater than 25 megawatts and sells electricity is an affected source.

A simple combustion turbine that added or began using auxiliary firing after 11/15/90 and sells electricity is an affected source.

If the source combusts fossil fuel and generates electricity for wholesale or retail (such as a cogeneration facility, a qualifying facility as defined in the Federal Power Act, an independent power producer, or a solid waste incinerator), review the applicability definitions in 40 CFR 72.6 to make a determination whether the source is an affected source.

- ☐ Yes, the source is an affected source as defined above. Complete form CD-01 to address all applicable requirements.
- ☐ Check this box if the source has an electrical generating unit that commenced operation after November 15, 1990, produces electricity for sale, serves one or more generators with a total nameplate capacity of 25 megawatts or less, burns only fuels with a sulfur content of 0.05% or less by weight in the new electrical generating unit and has a new unit exemption for each such electrical generating unit. Complete form CD-01 for each such electrical generating unit.
- ☐ No, the source is NOT an affected facility.

Hazardous Air Pollutants (HAP) Emission Sources

(40 CFR 63, MACT)

- 1) If the source has the **potential-to-emit** ten (10) tons per year or more of any single pollutant or twenty five (25) tons per year or more of any combination of pollutants listed in Table D, the source is a major HAP source and needs a Class I operating permit. Some area (non-major) sources are also required by the applicable requirement to obtain a class I operating permit.
- ☐ Yes, the source is a major HAP source and requires a Class I operating permit. Complete the CD forms to address all applicable requirements.
- ☐ Yes, the source is an area (non-major) source which is required to obtain a class I operating permit. **Contact BAR if the answer to this question is yes.**
- ☐ No, the source is NOT a major HAP source.
- 2) Read through the Categories of Sources of Hazardous Air Pollutants (Table E) and check one of the following:
- ☐ Yes, the source includes equipment that fits one or more of the major source categories listed in Table E. If yes, complete the following:

MACT Categories	Scheduled Promulgation Date	Compliance Date

If the source is subject to a proposed or promulgated standard, complete the CD forms to address all applicable requirements.

- ☐ No, the source does NOT have any equipment that fits any of the major source categories listed in Table E.

Section 112 (r) Sources (1990 CAAA §112(r))

- 1) Read through the list in Table F, Accidental Release Prevention list of regulated toxic/flammable substances and threshold quantities. List the substances which are in any process on the facility in an amount greater than the threshold quantities [§112(r)]:

And check one of the following:

- ☐ Yes, the source is subject to §112(r), Prevention of Accidental Releases.
☐ No, the source is NOT subject to §112(r).

If yes, has a management plan for the prevention of accidental releases that covers hazard assessment, pollution prevention, and emergency response issues been submitted to (1) Local Emergency Planning Committee; (2) State of Kansas; and (3) National Chemical Hazardous Investigation Board.

- ☐ Yes. ☐ No.

If no, submit a compliance schedule (**Form CD-03**).

Hazardous Organic NESHAP (HON) Rule (40 CFR 63)

The HON rule applies to production of 386 chemical substances produced by Synthetic Organic Chemical Manufacturing Industry (SOCMI) as commercial products. A source is subject to the HON rule if the source: 1) is a major HAP source; 2) manufactures as a primary product one or more of the chemicals listed in Table G of the appendices; and 3) uses as a reactant or manufactures as a product, by-product, or co-product, one or more of the organic hazardous air pollutants listed in Table H of the appendices.

The HON Rule also includes certain equipment leak provisions that apply to non-SOCMI facilities, such as styrene/butadiene rubber production (butadiene and styrene emissions only); polybutadiene rubber production (butadiene emissions only); production of certain agricultural chemicals (butadiene, carbon tetrachloride, methylene chloride, and ethylene dichloride emissions only); certain polymers/resins or other chemical processes (carbon tetrachloride, methylene chloride, tetrachloroethylene, chloroform, ethylene dichloride, and butadiene emissions only); and pharmaceutical processes using carbon tetrachloride or methylene chloride (carbon tetrachloride and methylene chloride emissions only).

- ☐ Yes, the source (or a portion of it) is subject to the HON rule. Complete the CD forms to address all applicable requirements.
☐ No, the source is NOT subject to HON requirements.

National Emission Standard for Hazardous Air Pollutants (NESHAP) (40 CFR 61)

Read through Table I. If the source emits any of the listed pollutants, and the source type, process or equipment matches those associated with the pollutant, a NESHAP requirement may apply to the source. To determine if a standard applies to the source, refer to the corresponding 40 CFR 61 subpart(s).

- ☐ Yes, the source (or a portion of it) is subject to a NESHAP requirement. Complete the CD forms to address all applicable requirements.
☐ No, the source is NOT subject to a NESHAP requirement.

VOC Regulations for Sources in Wyandotte and Johnson Counties (Reasonably Available Control Technology Rules)

If the source is located in Wyandotte or Johnson county and belongs to one or more of the following source categories, check KAR 28-19-61 through 28-19-77 to determine whether the source is subject to those regulations (check all that apply):

- ☐ Automobile and light duty truck surface coating (manufacturing only)
- ☐ Bulk gasoline terminals
- ☐ VOC liquid storage in permanent fixed roof type tanks
- ☐ VOC liquid storage in external floating roof tanks
- ☐ Petroleum refineries
- ☐ Leaks from petroleum refinery equipment
- ☐ Cutback asphalt
- ☐ Leaks from gasoline delivery vessels and vapor collection systems
- ☐ Printing operations
- ☐ Gasoline dispensing facilities
- ☐ Surface coating of miscellaneous metal parts and products and metal furniture
- ☐ Wool fiberglass manufacturing
- ☐ Solvent metal cleaning
- ☐ Lithograph printing operations
- ☐ Chemical processing facilities that operate alcohol plants or liquid detergent plants

Complete the CD forms to address all applicable requirements.

- ☐ N/A

Solid Waste Combustion

(1990 CAAA, §129(e), and KAR 28-19-500)

Is the source a municipal solid waste incinerator subject to rules adopted under section 129(e) of the federal Clean Air Act?

- ☐ Yes. Complete the CD forms to address all applicable requirements.
- ☐ No.

Permit Conditions

Conditions in construction permits which affect operations or emissions of the source in any manner are applicable requirements. Review all construction permits issued to this source. Check one of the following:

- ☐ Yes, the source has permit conditions. Complete the CD forms to address all applicable requirements.
- ☐ No, the source has no permit conditions.

Kansas State Implementation Plan (SIP) Rules

(KAR 28-19-20 through KAR 28-19-52)

- 1) Particulate Matter Emission Limitations (KAR 28-19-20).
If the source has any emission of particulate matter from any processing machine, equipment, device or other articles, or combination thereof, excluding indirect heating equipment and incinerators, the source is subject to KAR 28-19-20.
☐ Yes, the source is subject to KAR 28-19-20. Complete the CD forms to address this requirement.
☐ No, the source is NOT subject to KAR 28-19-20.
- 2) Hydrocarbon Emissions Stationary Sources (KAR 28-19-23).
If the source has any stationary tank reservoirs or other containers of more than 40,000 gallons capacity of gasoline or any petroleum distillate having a vapor pressure of 3.0 pounds per square inch, absolute, or greater under actual storage conditions, the source may be subject to KAR 28-19-23. Also, if the source has any ethylene waste gas stream of more than 50 pounds per day, the source may be subject to KAR 28-19-23. Also, if the source has emissions of any hydrocarbon gas stream, excluding methane, of more than 50 pounds per day from a vapor blow down system, the source may be subject to KAR 28-19-23.
☐ Yes, the source is subject to KAR 28-19-23. Complete the CD forms to address this requirement.
☐ No, the source is NOT subject to KAR 28-19-23.
☐ No, the source is exempt from KAR 28-19-23 because the applicable emission activities were existing on January 1, 1972.
- 3) Carbon Monoxide (CO) Emissions (KAR 28-19-24).
If the source has a grey iron cupola, the source may be subject to KAR 28-19-24. Also, if the source emits a CO waste gas stream from any catalyst regeneration of a petroleum cracking system, petroleum fluid coker, or other petroleum process in the atmosphere, the source may be subject to KAR 28-19-24.
☐ Yes, the source is subject to KAR 28-19-24. Complete the CD forms to address this requirement.
☐ No, the source is NOT subject to KAR 28-19-24.
☐ No, the source is exempt from KAR 28-19-24 because the applicable emission activities were existing on January 1, 1972.
- 4) Sulfuric Acid Mist (H₂SO₄) Emissions (KAR 28-19-26).
Sulfuric acid production activity is defined as a activity producing sulfuric acid through the contact process by burning elemental sulfur, alkylation acid, hydrogen sulfide, organic sulfides and mercaptans, or acid sludge. Sulfuric acid production activities do not include activities in which the conversion to sulfuric acid is used primarily to prevent emissions to the atmosphere of sulfur dioxide or other sulfur compounds.
If the source has a sulfuric acid production activity, the source may be subject to KAR 28-19-26.
☐ Yes, the source is subject to KAR 28-19-26. Complete the CD forms to address this requirement.
☐ No, the source is NOT subject to KAR 28-19-26.
- 5) Indirect Heating Equipment Emissions (KAR 28-19-30 through KAR 28-19-32).
Indirect heating equipment is any equipment in which fuel is burned for the primary purpose of producing steam, hot water, or hot air or other indirect heating of liquids, gases, or solids and in the course of doing so, the products of combustion do not come into direct contact with process materials.
If the source has any indirect heating equipment, the source may be subject to KAR 28-19-30 through KAR 28-19-32.
☐ Yes, the source is subject to KAR 28-19-30 through KAR 28-19-32. Complete the CD forms to address this requirement.
☐ No, the source is NOT subject to KAR 28-19-30 through KAR 28-19-32.

If yes, small and/or infrequently operated units may qualify for reduced periodic monitoring in order to demonstrate compliance with opacity requirements. Contact KDHE BAR for information on this.

- 6) Incinerator Emissions (KAR 28-19-40 through KAR 28-19-43).
If the source has a waste incinerator or pyrolysis unit or modified open burning operation, the source may be subject to KAR 28-19-40 through KAR 28-19-43.

- ☐ Yes, the source is subject to KAR 28-19-40 through KAR 28-19-43. Complete the CD forms to address all applicable requirements.
☐ No, the source is NOT subject to KAR 28-19-40 through KAR 28-19-43.

- 7) Opacity Requirements (KAR 28-19-650)

Complete the CD forms to address opacity requirements for any emission activity except as otherwise provided and except fugitive emissions.

- All Wyandotte County sources are subject to 20% opacity limitation.
- Processing of materials and other use of premises that existed on January 1, 1971 are subject to 40% opacity limitation.
- Processing of materials and other use of premises not existing on January 1, 1971 are subject to 20% opacity limitation.

For the purposes of completing the CD forms, the following emission sources may be presumed to be in compliance with any opacity limits of 20% or greater:

- Heaters burning refinery gas at refineries, degreasing operations, painting operations which filter particulate emissions, non-heat set printing operations, other non-heat set evaporative VOC sources, petroleum product storage tanks, glycol dehydrators, and sources which are vented inside a building which is usually occupied.

For the purposes of completing the CD forms, the following emission sources may be presumed to be in compliance with any opacity limits of 20% or greater when operating on natural gas or propane/LPG:

- Burners in indirect heating applications, space heaters, turbines, internal combustion engines or boilers. This presumption does not include emissions from the material being heated in indirect heating applications.

The above listed presumptions allow those listed emission sources to be shown in compliance by entering "burns natural gas/propane/LPG" or "< 20% opacity presumed", whichever is applicable, in column 2e) of form CD-01.

Small and/or infrequently operated units may qualify for reduced periodic monitoring in order to demonstrate compliance with opacity requirements. Contact KDHE BAR for information on this.

- 8) Is the source subject to any federally-enforceable emission limits which conflict with any applicable requirements?

Yes _____ No _____ If yes, explain (use additional sheets as necessary):

Complete the CD forms to address all applicable requirements.

- 9) Does the applicant propose any exemptions from otherwise applicable requirements?

Yes _____ No _____ If yes, explain (use additional sheets as necessary):

If "Yes" is checked, does the applicant request that the permit shield apply? Yes _____ No _____

- 10) Does the applicant propose any federally enforceable permit conditions?
Yes _____ No _____ If yes, list them (use additional sheets as necessary):

Complete the CD forms to address all applicable requirements.

- 11) Does the applicant propose any permit terms and conditions allowing emissions trading which are otherwise authorized in the Kansas air quality regulations?
Yes _____ No _____ If yes, list terms and conditions and reference the regulation which authorizes the emission trading (use additional sheets as necessary):

Complete the CD forms to address all applicable requirements.

- 12) Wyandotte County sources only. Is the source subject to any Wyandotte County ordinance as adopted into the Kansas State Implementation Plan at 40 CFR 52.870(c)(9)(iii)?
Yes _____ If yes, complete the CD forms to address all applicable requirements.
No _____
N/A _____

Applicable Requirements That Will Become Effective During Permit Term

The following applicable requirements will become applicable to the source during the permit term:

The applicant is required to state that the emission unit or stationary source will meet, on a timely basis, all applicable requirements that will become effective during the permit term.

The Applicant Must Check the Following Box "Yes" in Order for this Application to be Determined Complete:

- Yes _____ The stationary source which is the subject of this application will meet, on a timely basis, any applicable requirements which become effective during the permit term.

**CLASS I OPERATING PERMIT
APPLICATION FORM EC-01
EMISSIONS CALCULATION**

[illegible]

Form EC-01 Page 1 of 1

**CLASS I OPERATING PERMIT
APPLICATION FORM EC-01A
EMISSION GROUP INFORMATION**

[illegible][illegible]

Form EC-01A Page 1 of 1

1) Source ID No.: _____

2a) Emission Source or Compliance Group ID	2b) Citation	2c) Applicable Requirement	2d) Compliance Status	2e) How is compliance status to be demonstrated? (Monitoring, reporting, record keeping, and/or performance test)	2f) Certification Report Schedule	2g) Subject to Enhanced Monitoring Rule?

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[illegible][illegible]

Form CD-01A Page 1 of 1

1) Source ID No.: _____ 2) Site Name: _____

The source must submit a compliance schedule with the permit application if, on the date of application, the source is out of compliance with any applicable requirement. This compliance schedule shall resemble and be at least as stringent as that contained in any judicial consent decree or administrative order to which the equipment, emissions source or stationary source is subject. The emissions unit or stationary source which is the subject of this permit shall continue to comply with all applicable requirements.

3) Non-Compliant Emission Source or Compliance Group ID: _____

4) Applicable Requirement from CD-01, column 2c): _____

5) Describe non-compliance and actions to be taken to bring into compliance:

6) Milestones or Intermediate Steps	Date of Completion
a) Date by which preliminary evaluation of process change completed	
b) Date by which binding agreement entered into to alter emission unit or equipment	
c) Date by which construction permit applied for air pollution control equipment for this emission unit or equipment, or for replacement of this emission unit or equipment	
d) Date by which new emission source or equipment delivered to the source. If present emission unit or equipment was altered, state date such alteration began	
e) Date by which construction of new emission source or equipment completed	
f) Date by which alteration of existing emission source or equipment completed	
g) Date by which emission source or equipment tested to demonstrate compliance with the applicable requirements	
h) Other (Specify):	
i) Date by which emission unit or compliance group in full compliance	

7) Progress Report Schedule

(A schedule for submission of certified progress reports Every _____ months beginning _____ / _____ / _____ no less frequently than every 6 months)

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CLASS I OPERATING PERMIT
APPLICATION FORM **ME-01**
CONTINUOUS MONITORING SYSTEM INFORMATION

1) Source ID No.: _____

2a) CMS ID	2b) Emission Source ID	2c) CMS Existing or Proposed? (E or P)	2d) Data Storage Medium	2e) Parameter(s) Monitored	2f) Span Value (ppm, etc.)	2g) System Full-Scale Value (ppm, etc.)	2h) CMS Certification Date	2i) Bypass Capability (Y/N)
CMS-								
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DUPLICATE THIS FORM AS NEEDED

DESCRIPTION

1) Source ID No.: _____

2) Site Name: _____

3) Description:

DUPLICATE THIS FORM AS NECESSARY

Source ID No.: _____

Site Name: _____

CERTIFICATION

I certify under penalty of law that the enclosed documents and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.

I also certify that the stationary source identified in this application is in compliance with all applicable requirements except those requirements for which a compliance schedule has been submitted in Compliance Schedule Form (CD-03). I understand that failure to comply with any term of a compliance schedule is considered to be a violation of regulation K.A.R. 28-19-511.

Name of Responsible Official (print or type): _____

Title: _____

Signature: _____ Date: ____ / ____ / ____

Any person who fails to submit any relevant facts or who has submitted incorrect information in a permit application shall, upon becoming aware of such failure or incorrect submittal, promptly submit such supplementary facts or corrected information. In addition, an applicant shall provide additional information as necessary to address any requirements that become applicable to the stationary source after the date a complete application was filed but prior to the solicitation of public comments regarding the proposed permit. [K.A.R. 28-19-511 (f)]

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Source ID No.: _____ Source Name: _____

The period of time for which compliance is certified began at 12:01 a.m. on _____,
_____ and ended at 11:59 p.m. on _____, _____.

Certifications of compliance are required to be submitted at least annually. The period of time covered by each certification document can not exceed one year and there can be no period of time during the term of the permit for which compliance is not certified.

The terms or conditions of the permit that is the basis for this certification are those specified in the Class I Operating Permit issued by the Secretary of Health and Environment on _____,
_____.

Compliance status of each term or condition of the permit during the certification period:

1. ____ In continuous compliance with all applicable requirements during the entire certification period.
2. ____ Not in continuous compliance with all applicable requirements during the entire certification period.

If not in continuous compliance with all applicable requirements during the entire certification period, mark the applicable description below.

- ____ One or more instances of non-compliance with any applicable requirement during the certification period.
- ____ Continuous non-compliance with any applicable requirement during the certification period.

Provide a summary of the nature, duration, and frequency of the non-compliance that occurred, including the applicable requirement(s) and emission unit(s).

Compliance status of each term or condition of the permit at the time the certification is signed:

1. ____ In compliance with all applicable requirements at the time of certification.
2. ____ Not in compliance with all applicable requirements at the time of certification.

Provide a description of the nature, duration, and frequency of the non-compliance that occurred, including the applicable requirement(s) and emission unit(s).

DUPLICATE THIS FORM AS NECESSARY

Methods used to determine compliance during the certification period and at the time of signing the certification:
1. _____ In accordance with compliance demonstration methods specified in the Class I Operating Permit.
2. _____ Other - In accordance with attachments.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on information and belief formed after reasonable inquiry, including the person or persons who manage the system, or those persons directly responsible for gathering the information, the stated information in this document is true, accurate, and complete.

Name of Responsible Official (print or type):

Title: _____

Signature: _____ Date: _____ / _____ / _____

"Responsible official" means one of the following (From K.A.R. 28-19-200 General provisions; definitions):

- (1) For a corporation, a president, secretary, treasurer or vice-president in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or a duly authorized representative of such person if the representative is responsible for the overall operation of one or more manufacturing, production or operating facilities applying for or subject to permit or other relevant regulatory requirement and either:
 - (A) the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding \$25 million, in second quarter, 1980 dollars; or
 - (B) the delegation of authority to such representative is approved in advance by the department;
- (2) for a partnership or sole proprietorship, a general partner or the proprietor, respectively;
- (3) for a municipality, or a state, federal or other public agency, a principal executive officer or ranking elected official. For purposes of this definition, a principal executive officer of a federal agency shall include the chief executive officer having responsibility for the overall operations of a principal geographic unit of the agency; or
- (4) for affected sources, the designated representative under title IV, acid deposition control, of the federal clean air act, 42 USC 7401 et seq.

Send certification with original signatures to:

Air Construction/Operating Permits & Compliance Section
 Bureau of Air and Radiation
 Kansas Department of Health and Environment
 1000 SW Jackson, Suite 310
 Topeka, KS 66612-1366

Send a copy of certification to:

Kansas Compliance Officer
 Air Permitting and Compliance Branch
 U.S. EPA, Region 7
 901 N. 5th Street.
 Kansas City, KS 66101

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APPENDIX**Table A. Standards of Performance for New Stationary Sources
(NSPS, 40 CFR Part 60)**

Effective Date of Construction or Modification	Subpart	Source Categories
Before 9/20/94	Cb	Emission Guidelines for Large Municipal Waste Combustors
On/before 5/30/91	Cc	Emission Guidelines for Municipal Solid Waste Landfills
New & Existing	Cd	Emission Guidelines for Sulfuric Acid Production Units
On/before 6/20/96	Ce	Emission Guidelines for hospital/medical/infectious waste incinerator(s)
After 8/17/71	D	Fossil-Fuel-Fired Steam Generators, more than 250 million Btu/hr. heat input
After 9/18/78	Da	Electric Utility Steam Generating Units, more than 250 million Btu/hr. heat input of fossil fuel (either alone or in combination with any other fuel)
After 6/19/84 & On/before 6/19/86	Db	Industrial-Commercial-Institutional Steam Generating Units, greater than 100 million Btu/hr. heat input
After 6/09/89	Dc	Small Industrial-Commercial-Institutional Steam Generating Units, greater than or equal 10 million Btu/hr but less than or equal 100 million Btu/hr
After 8/17/71	E	Incinerators (burning solid waste), more than 50 tons/day charging rate
After 12/20/89 & On/before 9/20/94	Ea	Municipal Waste Combustors, more than 250 tons/day unit capacity
After 9/20/94	Eb	Large (>250 tons/day) Municipal Waste Combustors for which construction commenced after 9/20/94
After 6/19/96	Eb	Large (>250 tons/day) Municipal Waste Combustors for which modification or reconstruction commenced after 6/19/86
After 6/20/96	Ec	Hospital/medical/infectious waste incinerators for which construction commenced after 6/20/96
After 3/16/98	Ec	Existing hospital/medical/infectious waste incinerators for which modification commenced after 3/16/98
After 8/17/71	F	Portland Cement Plants
After 8/17/71	G	Nitric Acid Plants
After 8/17/71	H	Sulfuric Acid Plants
After 6/11/73	I	Hot Mix Asphalt Facilities
After 6/11/73	J	Petroleum Refineries, catalytic cracking unit catalyst regenerator or fuel gas combustion device
After 10/4/76	J	Petroleum Refineries, claus sulfur recovery plant with more than 20 long tons/day capacity
Between 6/11/73 & 5/19/78	K	Storage Vessels for Petroleum Liquids, capacity: >40,000 to =65,000 gallons, constructed between 3/8/74 and 5/19/78; >65,000 gallons capacity: constructed between 6/11/73 and 5/19/78
After 5/18/78 & on/before 7/23/84	Ka	Storage Vessels for Petroleum Liquids, greater than 40,000 gallons
After 7/23/84	Kb	Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels), storage capacity greater than or equal to 75 m ³
After 6/11/73	L	Secondary Lead Smelters, Pot furnace >550 lb charging capacity, blast & reverberatory furnaces
After 6/11/73	M	Secondary Brass and Bronze Production Plants
After 6/11/73	N	Primary Emissions from Basic Oxygen Process Furnaces
After 1/20/83	Na	Secondary Emissions From Basic oxygen Process Steelmaking Facilities
After 6/11/73	O	Sewage Treatment Plants: incinerator for combustion of wastes
After 10/16/74	P	Primary Copper Smelters, dryer, roaster, smelting furnace, and copper converter
After 10/16/74	Q	Primary Zinc Smelters, roaster and sintering machine
After 10/16/74	R	Primary Lead Smelters

Table A. Standards of Performance for New Stationary Sources (Continued)
(NSPS, 40 CFR Part 60)

Effective Date of Construction or Modification	Subpart	Source Categories
After 10/23/74	S	Primary Aluminum Reduction Plants, potroom groups and anode bake plants
After 10/22/74	T	Phosphate Fertilizer Industry: Wet-Process Phosphoric Acid Plants, > 15 tons P ₂ O ₅ feed/day
After 10/22/74	U	Phosphate Fertilizer Industry: Superphosphoric Acid Plants, > 15 tons P ₂ O ₅ feed/day
After 10/22/74	V	Phosphate Fertilizer Industry: Diammonium Phosphate Plants, > 15 tons P ₂ O ₅ feed/day
After 10/22/74	W	Phosphate Fertilizer Industry: Triple Superphosphate Plants, > 15 tons P ₂ O ₅ feed/day
After 10/22/74	X	Phosphate Fertilizer Industry: Granular Triple Superphosphate Storage Facilities
After 10/24/74	Y	Coal Preparation Plants, process rate > 200 tons/day
After 10/21/74	Z	Ferroalloy Production Facilities
After 10/21/74 & On/before 8/17/83	AA	Steel Plants: Electric Arc Furnaces
After 8/17/83	AAa	Steel Plants: Electric Arc Furnaces and Argon-Oxygen Decarburization Vessels
After 9/24/76	BB	Kraft Pulp Mills
After 6/15/79	CC	Glass Manufacturing Plants, furnaces with greater than or equal 5 tons glass/day
After 8/03/78	DD	Grain Elevators, permanent grain storage capacity of 1 million bushels
After 11/28/80	EE	Surface Coating of Metal Furniture, using = 3,842 liters of coating/year
After 10/3/77	GG	Stationary Gas Turbines, heat input at peak load: 10.7 gigajoules/hr
After 5/03/77	HH	Lime Manufacturing Plants, rotary lime kilns (except at kraft pulp mills)
After 1/14/80	KK	Lead-Acid Battery Manufacturing Plants, using = 6.5 tons lead/day
After 8/24/82	LL	Metallic Mineral Processing plants
After 10/5/79	MM	Automobile and Light Duty Truck Surface Coating Operations
After 9/21/79	NN	Phosphate Rock Plants, max production capacity greater than 4 tons/hr
After 2/04/80	PP	Ammonium Sulfate Manufacture
After 10/28/80	QQ	Graphic Arts Industry: Publication Rotogravure Printing
After 12/30/80	RR	Pressure Sensitive Tape and Label Surface Coating Operations (>50 tons VOC/year)
After 12/24/80	SS	Industrial Surface Coating: Large Appliances
After 1/05/81	TT	Metal Coil Surface Coating
After 11/18/80	UU	Asphalt Processing and Asphalt Roofing Manufacture
After 1/05/81	VV	Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry
After 11/26/80	WW	Beverage Can Surface Coating Industry
After 12/17/80	XX	Bulk Gasoline Terminals, maximum design gasoline throughput > 75,700 liters/day
On/after 7/01/88	AAA	New Residential Wood Heaters
After 1/20/83	BBB	Rubber Tire Manufacturing Industry
After 9/30/87	DDD	Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry
After 1/18/83	FFF	Flexible Vinyl and Urethane Coating and Printing
After 1/04/83	GGG	Equipment Leaks of VOC in Petroleum Refineries
After 11/23/82	HHH	Synthetic Fiber Production Facilities
After 10/21/83	III	Volatile Organic Compound (VOC) Emissions From the Synthetic Organic Chemical Manufacturing Industry (SOCMI) Air Oxidation Unit Processes
After 12/14/82	JJJ	Petroleum Dry Cleaners, rated dryer capacity greater than or equal 84 lb
After 1/20/84	KKK	Equipment Leaks of VOC From Onshore Natural Gas Processing Plants.
After 1/20/84	LLL	Onshore Natural Gas Processing: SO ₂ Emissions
After 12/30/83	NNN	Volatile Organic Compound (VOC) Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Distillation Operations

Table A. Standards of Performance for New Stationary Sources (Continued)
(NSPS, 40 CFR Part 60)

Effective Date of Construction or Modification	Subpart	Source Categories
After 8/31/83	OOO	Nonmetallic Mineral Processing Plants
After 2/07/84	PPP	Standard of Performance for Wool Fiberglass Insulation Manufacturing Plants
After 5/04/87	QQQ	VOC Emissions From Petroleum Refinery Wastewater Systems
After 6/29/90	RRR	Volatile Organic Compound Emissions From Synthetic Organic Chemical Manufacturing Industry (SOCMI) Reactor Processes
After 1/22/86	SSS	Magnetic Tape Coating Facilities
After 1/08/86	TTT	Industrial Surface Coating: Surface Coating of Plastic Parts for Business Machines
After 4/23/86	UUU	Calciners and Dryers in Mineral Industries
After 4/30/87	VVV	Polymeric Coating of Supporting Substrates Facilities
On/after 5/30/91	WWW	Municipal Solid Waste Landfills

Table B. List of Class I and Class II Substances

CLASS I SUBSTANCES:

Group I

chlorofluorocarbon-11 (CFC-11)
chlorofluorocarbon-12 (CFC-12)
chlorofluorocarbon-113 (CFC-113)
chlorofluorocarbon-114 (CFC-114)
chlorofluorocarbon-115 (CFC-115)

Group II

halon-1211
halon-1301
halon-2402

Group III

chlorofluorocarbon-13 (CFC-13)
chlorofluorocarbon-111 (CFC-111)
chlorofluorocarbon-112 (CFC-112)
chlorofluorocarbon-211 (CFC-211)
chlorofluorocarbon-212 (CFC-212)
chlorofluorocarbon-213 (CFC-213)
chlorofluorocarbon-214 (CFC-214)
chlorofluorocarbon-215 (CFC-215)
chlorofluorocarbon-216 (CFC-216)
chlorofluorocarbon-217 (CFC-217)

Group IV

carbon tetrachloride

Group V

methyl chloroform

The initial list under this subsection shall also include the isomers of the substances listed above, other than 1,1,2-trichloroethane (an isomer of methyl chloroform).

CLASS II SUBSTANCES:

hydrochlorofluorocarbon-21 (HCFC-21)
hydrochlorofluorocarbon-22 (HCFC-22)
hydrochlorofluorocarbon-31 (HCFC-31)
hydrochlorofluorocarbon-121 (HCFC-121)
hydrochlorofluorocarbon-122 (HCFC-122)
hydrochlorofluorocarbon-123 (HCFC-123)
hydrochlorofluorocarbon-124 (HCFC-124)
hydrochlorofluorocarbon-131 (HCFC-131)
hydrochlorofluorocarbon-132 (HCFC-132)
hydrochlorofluorocarbon-133 (HCFC-133)
hydrochlorofluorocarbon-141 (HCFC-141)
hydrochlorofluorocarbon-142 (HCFC-142)
hydrochlorofluorocarbon-221 (HCFC-221)
hydrochlorofluorocarbon-222 (HCFC-222)
hydrochlorofluorocarbon-223 (HCFC-223)
hydrochlorofluorocarbon-224 (HCFC-224)
hydrochlorofluorocarbon-225 (HCFC-225)

hydrochlorofluorocarbon-226 (HCFC-226)
hydrochlorofluorocarbon-231 (HCFC-231)
hydrochlorofluorocarbon-232 (HCFC-232)
hydrochlorofluorocarbon-233 (HCFC-233)
hydrochlorofluorocarbon-234 (HCFC-234)
hydrochlorofluorocarbon-235 (HCFC-235)
hydrochlorofluorocarbon-241 (HCFC-241)
hydrochlorofluorocarbon-242 (HCFC-242)
hydrochlorofluorocarbon-243 (HCFC-243)
hydrochlorofluorocarbon-244 (HCFC-244)
hydrochlorofluorocarbon-251 (HCFC-251)
hydrochlorofluorocarbon-252 (HCFC-252)
hydrochlorofluorocarbon-253 (HCFC-253)
hydrochlorofluorocarbon-261 (HCFC-261)
hydrochlorofluorocarbon-262 (HCFC-262)
hydrochlorofluorocarbon-271 (HCFC-271)

The initial list under this subsection shall also include the isomers of the substances listed above.

Table B. List of Class I and Class II Substances (Continued)

Substance	Ozone-depletion potential
chlorofluorocarbon-11 (CFC-11)	1.0
chlorofluorocarbon-12 (CFC-12)	1.0
chlorofluorocarbon-13 (CFC-13)	1.0
chlorofluorocarbon-111 (CFC-111)	1.0
chlorofluorocarbon-112 (CFC-112)	1.0
chlorofluorocarbon-113 (CFC-113)	0.8
chlorofluorocarbon-114 (CFC-114)	1.0
chlorofluorocarbon-115 (CFC-115)	0.6
chlorofluorocarbon-211 (CFC-211)	1.0
chlorofluorocarbon-212 (CFC-212)	1.0
chlorofluorocarbon-213 (CFC-213)	1.0
chlorofluorocarbon-214 (CFC-214)	1.0
chlorofluorocarbon-215 (CFC-215)	1.0
chlorofluorocarbon-216 (CFC-216)	1.0
chlorofluorocarbon-217 (CFC-217)	1.0
halon-1211	3.0
halon-1301	10.0
halon-2402	6.0
carbon tetrachloride	1.1
methyl chloroform	0.1
hydrochlorofluorocarbon-22 (HCFC-22)	0.05
hydrochlorofluorocarbon-123 (HCFC-123)	0.02
hydrochlorofluorocarbon-124 (HCFC-124)	0.02
hydrochlorofluorocarbon-141(b) (HCFC-141(b))	0.1
hydrochlorofluorocarbon-142(b) (HCFC-142(b))	0.06

Where the ozone-depletion potential of a substance is specified in the Montreal Protocol, the ozone-depletion potential specified for that substance under this section shall be consistent with the Montreal Protocol.

Table C.
List of Acid Rain Phase I and II Affected Facilities in the State of Kansas

Source Name	Phase I or II	Unit No.
Aquila, Arthur Mullergren	II	Unit 3
Aquila, Cimarron River	II	Unit 1
Aquila, Judson Large	II	Unit 4
Chanute Municipal Power Plant #2	II	Unit 14
Coffeyville Municipal Light & Power	II	Unit 4
Empire District Electric Co., Riverton	II	Units 39 & 40
Kansas City BPU, Kaw	II	Units 1 & 3
Kansas City BPU, Nearman Creek	II	Unit N1
Kansas City BPU, Quindaro	II	Unit 1
Kansas City BPU, Quindaro	I	Unit 2
KCPL, La Cygne	II	Units 1 & 2
KCPL, Osawatomie	II	Unit 1
KCPL, West Gardner	II	Units 1, 2, 3 & 4
McPherson Municipal Power Plant #2	II	Unit 1
McPherson Municipal Power Plant #3	II	Unit 1
Sunflower Electric Power Corp., Garden City	II	Unit S-2
Sunflower Electric Power Corp., Holcomb	II	Unit SGU1
Westar Energy, Gordon Evans	II	Units 1, 2, E1CT, E2CT & E3CT
Westar Energy, Hutchinson	II	Units 1, 2, 3 & 4
Westar Energy, Jeffrey Energy Center	II	Units 1, 2 & 3
Westar Energy, Lawrence	II	Units 3, 4 & 5
Westar Energy, Murray Gill	II	Units 1, 2, 3 & 4
Westar Energy, Neosho	II	Unit 7
Westar Energy, Tecumseh	II	Units 9 & 10
Winfield Municipal Power Plant #2	II	Unit 4

Table D-1. List of Hazardous Air Pollutants (by Chemical Name)

CAS number	Chemical Name
57147	1,1-Dimethyl hydrazine
79005	1,1,2-Trichloroethane
79345	1,1,2,2-Tetrachloroethane
96128	1,2-Dibromo -3-chloropropane
122667	1,2-Diphenylhydrazine
106887	1,2-Epoxybutane
75558	1,2-Propylenimine (2-Methyl aziridine)
120821	1,2,4-Trichlorobenzene
106990	1,3-Butadiene
542756	1,3-Dichloropropene
1120714	1,3-Propane sultone
106467	1,4-Dichlorobenzene(p)
123911	1,4-Dioxane (1,4-Diethyleneoxide)
53963	2-Acetylaminofluorine
532274	2-Chloroacetophenone
79469	2-Nitropropane
540841	2,2,4 - Trimethylpentane
1746016	2,3,7,8-Tetrachlorodibenzo-p-dioxin
584849	2,4 - Toluene diisocyanate
51285	2,4-Dinitrophenol
121142	2,4-Dinitrotoluene
94757	2,4-D, salts, esters(2,4-Dichlorophenoxy acetic acid)
95807	2,4-Toluene diamine
95954	2,4,5-Trichlorophenol
88062	2,4,6-Trichlorophenol
91941	3,3-Dichlorobenzidene
119904	3,3'-Dimethoxybenzidine
119937	3,3'-Dimethyl benzidine
92671	4-Aminobiphenyl
92933	4 - Nitrobiphenyl
100027	4 - Nitrophenol
101144	4,4-Methylene bis(2-chloroaniline)
101779	4,4'-Methylenedianiline
534521	4,6-Dinitro-o-cresol, and salts
75070	Acetaldehyde
60355	Acetamide
75058	Acetonitrile
98862	Acetophenone
107028	Acrolein
79061	Acrylamide
79107	Acrylic acid
107131	Acrylonitrile
107051	Allyl chloride
62533	Aniline
71432	Benzene
92875	Benzidine

Table D-1. List of Hazardous Air Pollutants (Continued)

CAS number	Chemical Name
98077	Benzotrichloride
100447	Benzyl chloride
57578	beta-Propiolactone
92524	Biphenyl
117817	Bis(2-ethylhexyl)phthalate (DEHP)
542881	Bis(chloromethyl)ether
75252	Bromoform
156627	Calcium cyanamide
133062	Captan
63252	Carbaryl
75150	Carbon disulfide
56235	Carbon tetrachloride
463581	Carbonyl sulfide
120809	Catechol
133904	Chloramben
57749	Chlordane
7782505	Chlorine
79118	Chloroacetic acid
108907	Chlorobenzene
510156	Chlorobenzilate
67663	Chloroform
107302	Chloromethyl methyl ether
126998	Chloroprene
1319773	Cresols/Cresylic acid (isomers and mixture)
95487	o-Cresol
108394	m-Cresol
106445	p-Cresol
98828	Cumene
334883	Diazomethane
132649	Dibenzofuran
72559	DDE (p,p'-Dichlorodiphenyldi-chloroethylene)
84742	Dibutylphthalate
111444	Dichloroethyl ether (Bis(2-chloroethyl)ether)
62737	Dichlorvos
111422	Diethanolamine
64675	Diethyl sulfate
60117	Dimethyl aminoazobenzene
79447	Dimethyl carbamoyl chloride
68122	Dimethyl formamide
131113	Dimethyl phthalate
77781	Dimethyl sulfate
106898	Epichlorohydrin
140885	Ethyl acrylate
100414	Ethyl benzene
51796	Ethyl carbamate (Urethane)
75003	Ethyl chloride

Table D-1. List of Hazardous Air Pollutants (Continued)

CAS number	Chemical Name
106934	Ethylene dibromide (Dibromoethane)
107062	Ethylene dichloride (1,2-Dichloroethane)
107211	Ethylene glycol
151564	Ethylene imine (Aziridine)
75218	Ethylene oxide
96457	Ethylene thiourea
75343	Ethylidene dichloride (1,1-Dichloroethane)
50000	Formaldehyde
76448	Heptachlor
118741	Hexachlorobenzene
87683	Hexachlorobutadiene
77474	Hexachlorocyclopentadiene
67721	Hexachloroethane
822060	Hexamethylene,-1, 6 -diisocyanate
680319	Hexamethylphosphoramide
110543	Hexane
302012	Hydrazine
7647010	Hydrochloric acid
7664393	Hydrogen fluoride
123319	Hydroquinone
78591	Isophorone
58899	Lindane (hexachlorcyclohexane, gamma)
108316	Maleic anhydride
67561	Methanol
72435	Methoxychlor
74839	Methyl bromide (Bromomethane)
74873	Methyl chloride (Chloromethane)
71556	Methyl chloroform (1,1,1-Trichloroethane)
78933	Methyl ethyl ketone (2-Butanone)
60344	Methyl hydrazine
74884	Methyl iodide (Iodomethane)
108101	Methyl isobutyl ketone
624839	Methyl isocyanate
80626	Methyl methacrylate
1634044	Methyl tert-butyl ether
75092	Methylene chloride (Dichloromethane)
101688	Methylene diphenyl diisocyanate
91203	Naphthalene
98953	Nitrobenzene
62759	N-Nitrosodimethylamine
59892	N-Nitrosomorpholine
684935	N-Nitroso-N-methylurea
121697	N,N-Dimethylaniline
90040	o-Anisidine
95534	o-Toluidine
56382	Parathion

Table D-1. List of Hazardous Air Pollutants (Continued)

CAS number	Chemical Name
82688	Pentachloronitrobenzene (Quintobenzene)
87865	Pentachlorophenol
108952	Phenol
75445	Phosgene
7803512	Phosphine
7723140	Phosphorous
85449	Phthalic anhydride
1336363	Polychlorinated biphenyls (Aroclors)
106503	p-Phenylenediamine
123386	Propionaldehyde
114261	Propoxur (Baygone)
78875	Propylene dichloride (1,2-Dichloropropane)
75569	Propylene oxide
91225	Quinoline
106514	Quinone
100425	Styrene
96093	Styrene oxide
127184	Tetrachloroethylene (Perchloroethylene)
7550450	Titanium tetrachloride
108883	Toluene
8001352	Toxaphene (chlorinated camphene)
79016	Trichloroethylene
121448	Triethylamine
1582098	Trifluralin
108054	Vinyl acetate
593602	Vinyl bromide (bromoethene)
75014	Vinyl chloride
75354	Vinylidene chloride (1,1-Dichloroethylene)
1330207	Xylenes (isomers and mixture)
108383	m-Xylenes
95476	o-Xylenes
106423	p-Xylenes

CHEMICAL COMPOUND CLASSES**- Arsenic and inorganic arsenic compounds**

7784421 Arsine

- Antimony compounds (except those specifically listed)¹

1309644 Antimony trioxide

1345046 Antimony trisulfide

7783702 Antimony pentafluoride

28300745 Antimony potassium tartrate

Table D-1. List of Hazardous Air Pollutants (Continued)

CAS number	Chemical Name
-	Beryllium compounds (except Beryllium salts)
-	Beryllium salts
-	Cadmium compounds
130618	Cadmium oxide
-	Chromium compounds (except Hexavalent and Trivalent)
-	Hexavalent Chromium compounds
-	Trivalent Chromium compounds
10025737	Chromic chloride
744084	Cobalt metal (and compounds, except those specifically listed) ¹
10210681	Cobalt carbonyl
62207765	Fluomine
-	Coke oven emissions
-	Cyanide compounds (except those specifically listed) ¹
143339	Sodium cyanide
151508	Potassium cyanide
-	Fine mineral fibers (average diameter of 1micrometer or less)
-	(except those specifically listed) ¹
1332214	Asbestos
-	Erionite
-	Silica (crystalline)
-	Talc (containing asbestos form fibers)
-	Glass wool
-	Rock wool
-	Slag wool
-	Ceramic fibers
-	Glycol ethers (except those specifically listed) ¹
110805	2-Ethoxy ethanol
111762	Ethylene glycol monobutyl ether
108864	2-Methoxy ethanol
-	Lead compounds (except those specifically listed) ¹
75741	Tetramethyl lead
78002	Tetraethyl lead
7439965	Manganese and compounds (except those specifically listed) ¹
12108133	Methylcyclopentadienyl manganese

Table D-1. List of Hazardous Air Pollutants (Continued)

CAS number	Chemical Name
-	Mercury compounds (except those specifically listed) ¹
10045940	Mercuric nitrate
748794	Mercuric chloride
62384	Phenyl mercuric acetate
-	Elemental Mercury
-	Nickel compounds (except those specifically listed) ¹
13463393	Nickel Carbonyl
12035722	Nickel refinery dust
-	Nickel subsulfide
-	Polycyclic organic matter-POM (except those specifically listed) ¹
56553	Benz(a)anthracene
50328	Benzo(a)pyrene
205992	Benzo(b)fluoranthene
57976	7,12-Dimethylbenz(a)anthracene
225514	Benz(c)acridine
218019	Chrysene
53703	Dibenz(ah)anthracene
189559	1,2:7,8-Dibenzopyrene
193395	Indeno(1,2,3-cd)pyrene
-	Dioxins & Furans (TCDD equivalent) ²
7782492	Selenium and compounds (except those specifically listed) ¹
7488564	Selenium sulfide (mono and di)
7783075	Hydrogen selenide
10102188	Sodium selenite
13410010	Sodium selenate
99999918	Radionuclides (including radon) ³

Notes:

1. For this chemical group, specific compounds or subgroups are listed in this table. For the remainder of the chemicals of the chemical group, a single de minimis value is listed, which applies to compounds that are not listed.
2. The "toxic equivalent factor" method in EPA/625/3-89-016, U.S. EPA, Interim procedures for estimating risk associated with exposure to mixtures, 1989 shall be used for PCDD/PCDF mixtures. A different de minimis level will be determined for each mixture depending on the equivalency factors used which are compound specific.
3. Subpart B and I, and Appendix E of 40 CFR part 61 has been relied upon to assign a de minimis level based on an effective dose equivalent of 0.3 millirem per year for a 7 year exposure period that would result in a cancer risk of 1 per million. The individual radionuclides subject to de minimis levels used for section 112(g) are also contained in 40 CFR part 61.

Table D-2. List of Hazardous Air Pollutants (by CAS Number)

CAS Number	Chemical Name	CAS Number	Chemical Name
0	Antimony Compounds	75070	Acetaldehyde
0	Arsenic Compounds (inorganic including arsine)	75092	Methylene chloride (Dichloromethane)
0	Beryllium Compounds	75150	Carbon disulfide
0	Cadmium Compounds	75218	Ethylene oxide
0	Chromium Compounds	75252	Bromoform
0	Cobalt Compounds	75343	Ethylidene dichloride (1,1-Dichloroethane)
0	Coke Oven Emissions	75354	Vinylidene chloride (1,1-Dichloroethylene)
0	Cyanide Compounds	75445	Phosgene
0	Fine mineral fibers	75558	1,2-Propylenimine (2-Methyl aziridine)
0	Glycol ethers	75569	Propylene oxide
0	Lead Compounds	76448	Heptachlor
0	Manganese Compounds	77474	Hexachlorocyclopentadiene
0	Mercury Compounds	77781	Dimethyl sulfate
0	Nickel Compounds	78591	Isophorone
0	Polycyclic Organic Matter	78875	Propylene dichloride (1,2-Dichloropropane)
0	Radionuclides (including radon)	78933	Methyl ethyl ketone (2-Butanone)
0	Selenium Compounds	79005	1,1,2-Trichloroethane
50000	Formaldehyde	79016	Trichloroethylene
51285	2,4-Dinitrophenol	79061	Acrylamide
51796	Ethyl carbamate (Urethane)	79107	Acrylic acid
53963	2-Acetylaminofluorene	79118	Chloroacetic acid
56235	Carbon tetrachloride	79345	1,1,2,2-Tetrachloroethane
56382	Parathion	79447	Dimethyl carbamoyl chloride
57147	1,1-Dimethyl hydrazine	79469	2-Nitropropane
57578	beta-Propiolactone	80626	Methyl methacrylate
57749	Chlordane	82688	Pentachloronitrobenzene (Quintobenzene)
58899	Lindane (all isomers)	84742	Dibutylphthalate
59892	N-Nitrosomorpholine	85449	Phthalic anhydride
60117	Dimethyl aminoazobenzene	87683	Hexachlorobutadiene
60344	Methyl hydrazine	87865	Pentachlorophenol
60355	Acetamide	88062	2,4,6-Trichlorophenol
62533	Aniline	90040	o-Anisidine
62737	Dichlorvos	91203	Naphthalene
62759	N-Nitrosodimethylamine	91225	Quinoline
63252	Carbaryl	91941	3,3-Dichlorobenzidene
64675	Diethyl sulfate	92524	Biphenyl
67561	Methanol	92671	4-Aminobiphenyl
67663	Chloroform	92875	Benzidine
67721	Hexachloroethane	92933	4-Nitrobiphenyl
68122	Dimethyl formamide	94757	2,4-D, salts and esters
71432	Benzene (including benzene from gasoline)	95476	o-Xylenes
71556	Methyl chloroform (1,1,1-Trichloroethane)	95487	o-Cresol
72435	Methoxychlor	95534	o-Toluidine
74839	Methyl bromide (Bromomethane)	95807	2,4-Toluene diamine
74873	Methyl chloride (Chloromethane)	95954	2,4,5-Trichlorophenol
74884	Methyl iodide (Iodomethane)	96093	Styrene oxide
75003	Ethyl chloride (Chloroethane)	96128	1,2-Dibromo-3-chloropropane
75014	Vinyl chloride	96457	Ethylene thiourea
75058	Acetonitrile	98077	Benzotrithloride

Table D-2. List of Hazardous Air Pollutants (Continued)

CAS Number	Chemical Name	CAS Number	Chemical Name
98828	Cumene	123319	Hydroquinone
98862	Acetophenone	123386	Propionaldehyde
98953	Nitrobenzene	123911	1,4-Dioxane (1,4-Diethyleneoxide)
100027	4-Nitrophenol	126998	Chloroprene
100414	Ethyl benzene	127184	Tetrachloroethylene (Perchloroethylene)
100425	Styrene	131113	Dimethyl phthalate
100447	Benzyl chloride	132649	Dibenzofurans
101144	4,4-Methylene bis(2-chloroaniline)	133062	Captan
101688	Methylene diphenyl diisocyanate (MDI)	133904	Chloramben
101779	4,4-Methylenedianiline	140885	Ethyl acrylate
106423	p-Xylenes	151564	Ethylene imine (Aziridine)
106445	p-Cresol	156627	Calcium cyanamide
106467	1,4-Dichlorobenzene(p)	302012	Hydrazine
106503	p-Phenylenediamine	334883	Diazomethane
106514	Quinone	463581	Carbonyl sulfide
106887	1,2-Epoxybutane	510156	Chlorobenzilate
106898	Epichlorohydrin (1-Chloro-2,3-epoxypropane)	532274	2-Chloroacetophenone
106934	Ethylene dibromide (Dibromoethane)	534521	4,6-Dinitro-o-cresol, and salts
106990	1,3-Butadiene	540841	2,2,4-Trimethylpentane
107028	Acrolein	542756	1,3-Dichloropropene
107051	Allyl chloride	542881	Bis(chloromethyl)ether
107062	Ethylene dichloride (1,2-Dichloroethane)	584849	2,4-Toluene diisocyanate
107131	Acrylonitrile	593602	Vinyl bromide
107211	Ethylene glycol	624839	Methyl isocyanate
107302	Chloromethyl methyl ether	680319	Hexamethylphosphoramide
108054	Vinyl acetate	684935	N-Nitroso-N-methylurea
108101	Methyl isobutyl ketone (Hexone)	822060	Hexamethylene-1,6-diisocyanate
108316	Maleic anhydride	1120714	1,3-Propane sultone
108383	m-Xylenes	1319773	Cresols/Cresylic acid (isomers and mixture)
108394	m-Cresol	1330207	Xylenes (isomers and mixture)
108883	Toluene	1332214	Asbestos
108907	Chlorobenzene	1336363	Polychlorinated biphenyls (Aroclors)
108952	Phenol	1582098	Trifluralin
110543	Hexane	1634044	Methyl tert butyl ether
111422	Diethanolamine	1746016	2,3,7,8-Tetrachlorodibenzo-p-dioxin
111444	Dichloroethyl ether (Bis(2-chloroethyl)ether)	3547044	DDE
114261	Propoxur (Baygon)	7550450	Titanium tetrachloride
117817	Bis(2-ethylhexyl)phthalate (DEHP)	7647010	Hydrochloric acid
118741	Hexachlorobenzene	7664393	Hydrogen fluoride (Hydrofluoric acid)
119904	3,3-Dimethoxybenzidine	7723140	Phosphorus
119937	3,3-Dimethyl benzidine	7782505	Chlorine
120809	Catechol	7803512	Phosphine
120821	1,2,4-Trichlorobenzene	8001352	Toxaphene (chlorinated camphene)
121142	2,4-Dinitrotoluene		
121448	Triethylamine		
121697	N,N-Diethyl aniline (N,N-Dimethylaniline)		
122667	1,2-Diphenylhydrazine		

**Table E-1. Categories of Sources of Hazardous Air Pollutants
And Regulation Promulgation Schedule (by Industry Group)**

INDUSTRY GROUP: FUEL COMBUSTION		
40 CFR 63 Subpart	Title	Promulgation Date (or Scheduled)
YYYY	Combustion Turbines	3/5/2004
PPPPP	Engine Test Cells/Stand (combined with Rocket Testing Facilities)	5/27/2003
DDDDD	Industrial, Commercial, and Institutional Boilers and Process Heaters	9/13/2004
ZZZZ	Stationary Reciprocating Internal Combustion Engines (RICE)	6/15/2004

INDUSTRY GROUP: NON-FERROUS METALS PROCESSING		
40 CFR 63 Subpart	Title	Promulgation Date (or Scheduled)
LL	Primary Aluminum Production	10/7/1997
QQQ	Primary Copper	6/12/2002
TTT	Primary Lead Smelting	6/4/1999
TTTTT	Primary Magnesium Refining	10/10/2003
RRR	Secondary Aluminum	3/23/2000
X	Secondary Lead Smelters	6/23/1995

INDUSTRY GROUP: FERROUS METALS PROCESSING		
40 CFR 63 Subpart	Title	Promulgation Date (or Scheduled)
CCCCC	Coke Oven: Pushing, Quenching, & Battery Stacks	1/30/2001
L	Coke Ovens • Charging, Top Side, and Door Leaks	10/27/1993
XXX	Ferroalloys Production	5/20/1999
FFFFF	Integrated Iron & Steel	5/20/2003
EEEEEE	Iron Foundries	4/22/2004
CCC	Steel Pickling-HCL Process	6/22/1999

INDUSTRY GROUP: MINERAL PRODUCTS PROCESSING		
40 CFR 63 Subpart	Title	Promulgation Date (or Scheduled)
LLLLL	Asphalt Roofing & Processing	4/29/2003
JJJJJ	Brick and Structural Clay Products Manufacturing	5/16/2003
KKKKK	Clay Ceramics Manufacturing	5/16/2003
AAAAA	Lime Manufacturing	1/5/2004
DDD	Mineral Wool Production	6/1/1999
LLL	Portland Cement Manufacturing	6/14/1999
RRRRR	Taconite Iron Ore Processing	10/30/2003
HHHH	Wet Formed Fiberglass Mat Production	4/11/2002
NNN	Wool Fiberglass Manufacturing	6/14/1999

INDUSTRY GROUP: PETROLEUM AND NATURAL GAS PRODUCTION AND REFINING		
40 CFR 63 Subpart	Title	Promulgation Date (or Scheduled)
HH	Oil & Natural Gas Production	6/17/1999
CC	Petroleum Refineries	8/18/1995
UUU	Petroleum Refineries Catalytic Cracking, Catalytic Reforming, & Sulfur Plant Units	4/11/2002

Table E-1. Categories of Sources of HAPs (Continued)

INDUSTRY GROUP: LIQUIDS DISTRIBUTION		
40 CFR 63 Subpart	Title	Promulgation Date (or Scheduled)
R	Gasoline Distribution (Stage 1)	12/14/1994
Y	Marine Vessel Loading Operations	9/19/1995
EEEE	Organic Liquids Distribution (non-gasoline)	2/3/2004

INDUSTRY GROUP: SURFACE COATING PROCESSES		
40 CFR 63 Subpart	Title	Promulgation Date (or Scheduled)
GG	Aerospace Industry	9/1/1995
III	Auto & Light Duty Truck (surface coating)	4/26/2004
OOOO	Fabric Printing, Coating & Dyeing	5/29/2003
NNNN	Large Appliance (surface coating)	7/23/2002
EE	Magnetic Tape	12/15/1994
SSSS	Metal Coil (Surface Coating) Industry	6/10/2002
KKKK	Metal Can (Surface Coating)	11/13/2003
RRRR	Metal Furniture (Surface Coating)	5/23/2003
HHHHH	Misc. Coating Manufacturing	12/11/2003
MMMM	Misc. Metal Parts and Products (Surface Coating) • Asphalt/Coal Tar Application to Metal Pipes	1/2/2004
JJJJ	Paper & Other Web (Surface Coating)	12/4/2002
PPPP	Plastic Parts (Surface Coating)	4/19/2004
KK	Printing/Publishing	5/30/1996
II	Shipbuilding & Ship Repair	12/15/1995
QQQQ	Wood Building Products (surface coating)	5/28/2003
JJ	Wood Furniture	12/7/1995

INDUSTRY GROUP: WATER TREATMENT AND DISPOSAL		
40 CFR 63 Subpart	Title	Promulgation Date (or Scheduled)
FF	Benzene Waste Operations	12/4/2003
Parts 63,261,270	Hazardous Waste Combustion	9/30/1999
AAAA	Municipal Solid Waste Landfills	1/16/2003
DD	Off-site Waste Recovery Operations	7/1/1996
VVV	Publicly Owned Treatment Works (POTW)	10/26/1999
GGGGG	Site Remediation	10/8/2003

Table E-1. Categories of Sources of HAPs (Continued)

INDUSTRY GROUP: AGRICULTURAL CHEMICALS PRODUCTION		
40 CFR 63 Subpart	Title	Promulgation Date (or Scheduled)
MMM	Pesticide Active Ingredient Production <ul style="list-style-type: none"> • 4-Chloro-2-Methyl Acid Production • 2,4 Salts & Esters Production • 4,6-dinitro-o-cresol Production • Butadiene Furfural Cotrimer • Captafol Production • Captan Production • Chloroneb Production • Chlorothalonil Production • Dacthal (tm) Production • Sodium Pentachlorophenate Production • Tordon (tm) Acid Production 	6/23/1999

INDUSTRY GROUP: FOOD AND AGRICULTURE PROCESSES		
40 CFR 63 Subpart	Title	Promulgation Date (or Scheduled)
CCCC	Manufacturing Nutritional Yeast	5/21/2001

INDUSTRY GROUP: PHARMACEUTICAL PRODUCTION PROCESSES		
40 CFR 63 Subpart	Title	Promulgation Date (or Scheduled)
GGG	Pharmaceuticals Production	9/21/1998

Table E-1. Categories of Sources of HAPs (Continued)

INDUSTRY GROUP: POLYMERS AND RESINS PRODUCTION		
40 CFR 63 Subpart	Title	Promulgation Date (or Scheduled)
VVVV	Boat Manufacturing	8/22/2001
UUUU	Cellulose Production Manufacturing <ul style="list-style-type: none"> • Caroxymethylcellulose Production • Cellulose Ethers Production • Cellulose Food Casing Manufacturing • Cellophane Production • Methylcellulose Production • Rayon Production 	6/11/2002
MMMM	Flexible Polyurethane Foam Fabrication Production	4/14/2003
III	Flexible Polyurethane Foam Production	10/7/1998
PPP	Polyether Polyols Production	6/1/1999
U	Polymers & Resins I <ul style="list-style-type: none"> • Butyl Rubber • Epichlorohydrin Elastomers • Ethylene Propylene Rubber • Hypalon (TM) Production • Neoprene Production • Nitrile Butadiene Rubber • Polybutadiene Rubber • Polysulfide Rubber • Styrene-Butadiene Rubber & Latex 	9/5/1996
W	Polymers & Resins II <ul style="list-style-type: none"> • Epoxy Resins Production • Non-Nylon Polyamides Production 	3/8/1995
OOO	Polymers & Resins III Amino Resins Phenolic Resins	1/20/2000
JJJ	Polymers & Resins IV <ul style="list-style-type: none"> • Acrylonitrile-Butadiene-Styrene • Methyl Methacrylate-Acrylonitrile • Methyl Methacrylate-Butadiene • Polystyrene • Styrene Acrylonitrile • Polyethylene Terephthalate 	9/12/1996
J	Polyvinyl Chloride and Copolymers Production	7/10/2002
WWW	Reinforced Plastic Composites Production	4/21/2003

INDUSTRY GROUP: PRODUCTION OF INORGANIC CHEMICALS		
40 CFR 63 Subpart	Title	Promulgation Date (or Scheduled)
NNNN	Hydrochloric Acid Production <ul style="list-style-type: none"> • Fumed Silica Production 	Proposal 9/18/2001
IIII	Mercury Cell Chlor-Alkali Plants	12/19/2003
AA	Phosphoric Acid Manufacturing Plants	6/10/1999
BB	Phosphate Fertilizers Production Plants	6/10/1999

INDUSTRY GROUP: PRODUCTION OF ORGANIC CHEMICALS		
40 CFR 63 Subpart	Title	Promulgation Date (or Scheduled)
F, G, H, I	Hazardous Organic NESHAP	4/22/1994

Table E-1. Categories of Sources of HAPs (Continued)

INDUSTRY GROUP: MISCELLANEOUS PROCESSES		
40 CFR 63 Subpart	Title	Promulgation Date (or Scheduled)
N	Chromium Electroplating <ul style="list-style-type: none"> • Chromic Acid Anodizing • Decorative Chromium Electroplating • Hard Chromium Electroplating 	1/25/1995
O	Commercial Sterilizers	12/06/1994
T	Degreasing Organic Cleaners (Halogenated Solvent Cleaning)	12/2/1994
M	Dry Cleaning <ul style="list-style-type: none"> • Commercial drycleaning dry-to-dry • Commercial drycleaning transfer machines • Industrial drycleaning dry-to-dry • Industrial drycleaning transfer machines 	9/22/1993
UUUUU	Electric Utility Steam Generating Units	Proposal 1/30/2004
QQQQQ	Friction Products Production	10/18/2002
YY	Generic MACT <ul style="list-style-type: none"> • Acetal Resins • Hydrogen Fluoride • Polycarbonates Production • Acrylic/Modacrylic Fibers 	6/29/1999
YY	Generic MACT <ul style="list-style-type: none"> • Carbon black production • Cyanide chemicals mfg. • Ethylene processes • Spandex production 	7/12/2002
Q	Industrial Cooling Towers	9/8/1994
TTTT	Leather Finishing Operations	2/27/2002
FFFF	Misc. Organic Chemical Production and Processes (MON) <ul style="list-style-type: none"> • Alkyd Resins Production • Ammonium Sulfate Production • Benzyltrimethylammonium Chloride Prod. • Carbonyl Sulfide Production • Chelating Agents Production • Chlorinated Paraffins Production • Ethyllidene Norbomene Production • Explosives Production • Hydrazine Production • Maleic Anhydride Copolymers Production • Manufacture of Paints, Coatings, & Adhesives • OBPA/1, 3-diisocyanate Production • Photographic Chemicals Production • Phthalate Plasticizers Production • Polyester Resins Production • Polymerized Vinylidene Chloride Prod. • Polymethyl Methacrylate Resins Prod. • Polyvinyl Acetate Emulsions Prod. • Polyvinyl Alcohol Production • Polyvinyl Butyral Production • Quaternary Ammonium Comp. Prod. • Rubber Chemicals Production • Symmetrical Tetrachloropyridine Production 	11/10/2003
HHH	Natural Gas Transmission and Storage	6/17/1999
DDDD	Plywood and Composite Wood Products	Proposal 1/9/2003
S	Pulp & Paper (non-combust) MACT I	4/15/1998

INDUSTRY GROUP: MISCELLANEOUS PROCESSES		
S	Pulp & Paper (non-chem) MACT III	3/8/1996
MM	Pulp and Paper (combustion sources) MACT II Kraft, Soda, and Sulfite Pulp & Paper Mills	1/12/2001
SSSSS	Refractory Products Manufacturing	4/16/2003
BBBBB	Semiconductor Manufacturing	5/22/2003
GGGG	Solvent Extraction and Vegetable Oil Production	4/12/2001
F	Tetrahydrobenzaldehyde Manufacture	5/12/1998
XXXX	Tire Manufacturing	7/9/2002

**Table F-1. List of Regulated Toxic Substances and Threshold Quantities
for Accidental Release Prevention [Alphabetical Order - 77 Substances]**

Chemical Name	CAS No	Threshold Quantity (lbs)	Basis for Listing
Acrolein [2-Propenal]	107-02-8	5,000	b
Acrylonitrile [2-Propenenitrile]	107-13-1	20,000	b
Acrylyl chloride [2-Propenoyl chloride]	814-68-6	5,000	b
Allyl alcohol [2-Propen-1-ol]	107-18-6	15,000	b
Allylamine [2-Propen-1-amine]	107-11-9	10,000	b
Ammonia (anhydrous)	7664-41-7	10,000	a, b
Ammonia (conc 20% or greater)	7664-41-7	20,000	a, b
Arsenous trichloride	7784-34-1	15,000	b
Arsine	7784-42-1	1,000	b
Boron trichloride [Borane, trichloro-]	10294-34-5	5,000	b
Boron trifluoride [Borane, trifluoro-]	7637-07-2	5,000	b
Boron trifluoride compound with methyl ether (1:1) [Boron, trifluoro[oxybis(methane)]-, T-4-	353-42-4	15,000	b
Bromine	7726-95-6	10,000	a, b
Carbon disulfide	75-15-0	20,000	b
Chlorine	7782-50-5	2,500	a, b
Chlorine dioxide [Chlorine oxide (ClO ₂)]	10049-04-4	1,000	c
Chloroform [Methane, trichloro-]	67-66-3	20,000	b
Chloromethyl ether [Methane, oxybis[chloro-]	542-88-1	1,000	b
Chloromethyl methyl ether [Methane, chloromethoxy -]	107-30-2	5,000	b
Crotonaldehyde [2-Butenal]	4170-30-3	20,000	b
Crotonaldehyde, (E)- [2-Butenal, (E)-]	123-73-9	20,000	b
Cyanogen chloride	506-77-4	10,000	c
Cyclohexylamine [Cyclohexanamine]	108-91-8	15,000	b
Diborane	19287-45-7	2,500	b
Dimethyldichlorosilane [Silane, dichlorodimethyl-]	75-78-5	5,000	b
1,1-Dimethylhydrazine [Hydrazine, 1,1-dimethyl-]	57-14-7	15,000	b
Epichlorohydrin [Oxirane, (chloromethyl)-]	106-89-8	20,000	b
Ethylenediamine [1,2-Ethanediamine]	107-15-3	20,000	b
Ethyleneimine [Aziridine]	151-56-4	10,000	b
Ethylene oxide [Oxirane]	75-21-8	10,000	a, b
Fluorine	7782-41-4	1,000	b
Formaldehyde (solution)	50-00-0	15,000	b
Furan	110-00-9	5,000	b
Hydrazine	302-01-2	15,000	b
Hydrochloric acid (conc 37% or greater)	7647-01-0	15,000	d
Hydrocyanic acid	74-90-8	2,500	a, b
Hydrogen chloride (anhydrous) [Hydrochloric acid]	7647-01-0	5,000	a
Hydrogen fluoride/Hydrofluoric acid (conc 50% or greater) [Hydrofluoric acid]	7664-39-3	1,000	a, b
Hydrogen selenide	7783-07-5	500	b
Hydrogen sulfide	7783-06-4	10,000	a, b
Iron, pentacarbonyl- [Iron carbonyl (Fe(CO) ₅), (TB-5-11)-]	13463-40-6	2,500	b
Isobutyronitrile [Propanenitrile, 2-methyl-]	78-82-0	20,000	b
Isopropyl chloroformate [Carbonochloridic acid, 1-methylethyl ester]	108-23-6	15,000	b

**Table F-1. List of Regulated Toxic Substances and Threshold Quantities
for Accidental Release Prevention [Alphabetical Order - 77 Substances]**

Chemical Name	CAS No	Threshold Quantity (lbs)	Basis for Listing
Methacrylonitrile [2-Propenenitrile, 2-methyl-]	126-98-7	10,000	b
Methyl chloride [Methane, chloro-]	74-87-3	10,000	a
Methyl chloroformate [Carbonochloridic acid, methylester]	79-22-1	5,000	b
Methyl hydrazine [Hydrazine, methyl-]	60-34-4	15,000	b
Methyl isocyanate [Methane, isocyanato-]	624-83-9	10,000	a, b
Methyl mercaptan [Methanethiol]	74-93-1	10,000	b
Methyl thiocyanate [Thiocyanic acid, methyl ester]	556-64-9	20,000	b
Methyltrichlorosilane [Silane, trichloromethyl-]	75-79-6	5,000	b
Nickel carbonyl	13463-39-3	1,000	b
Nitric acid (conc 80% or greater)	7697-37-2	15,000	b
Nitric oxide [Nitrogen oxide (NO)]	10102-43-9	10,000	b
Oleum (Fuming Sulfuric acid) [Sulfuric acid, mixture with sulfur trioxide] ¹	8014-95-7	10,000	e
Peracetic acid [Ethaneperoxoic acid]	79-21-0	10,000	b
Perchloromethylmercaptan [Methanesulphenyl chloride, trichloro-]	594-42-3	10,000	b
Phosgene [Carbonic dichloride]	75-44-5	500	a, b
Phosphine	7803-51-2	5,000	b
Phosphorus oxychloride [Phosphoryl chloride]	10025-87-3	5,000	b
Phosphorus trichloride [Phosphorous trichloride]	7719-12-2	15,000	b
Piperidine	110-89-4	15,000	b
Propionitrile [Propanenitrile]	107-12-0	10,000	b
Propyl chloroformate [Carbonochloridic acid, propylester]	109-61-5	15,000	b
Propyleneimine [Aziridine, 2-methyl-]	75-55-8	10,000	b
Propylene oxide [Oxirane, methyl-]	75-56-9	10,000	b
Sulfur dioxide (anhydrous)	7446-09-5	5,000	a, b
Sulfur tetrafluoride [Sulfur fluoride (SF ₄), (T-4)-]	7783-60-0	2,500	b
Sulfur trioxide	7446-11-9	10,000	a, b
Tetramethyllead [Plumbane, tetramethyl-]	75-74-1	10,000	b
Tetranitromethane [Methane, tetranitro-]	509-14-8	10,000	b
Titanium tetrachloride [Titanium chloride (TiCl ₄) (T-4)-]	7550-45-0	2,500	b
Toluene 2,4-diisocyanate [Benzene, 2,4-diisocyanato-1-methyl-] ¹	584-84-9	10,000	a
Toluene 2,6-diisocyanate [Benzene, 1,3-diisocyanato-2-methyl-] ¹	91-08-7	10,000	a
Toluene diisocyanate (unspecified isomer) [Benzene, 1,3-diisocyanatomethyl-] ¹	26471-62-5	10,000	a
Trimethylchlorosilane [Silane, chlorotrimethyl-]	75-77-4	10,000	b
Vinyl acetate monomer [Acetic acid ethenyl ester]	108-05-4	15,000	b

¹ The mixture exemption in §68.115(b)(1) does not apply to the substance.

Note: Basis for Listing:

^a Mandated for listing by Congress.

^b On EHS list, vapor pressure 10 mmHg or greater.

^c Toxic gas.

^d Toxicity of hydrogen chloride, potential to release hydrogen chloride, and history of accidents.

^e Toxicity of sulfur trioxide and sulfuric acid, potential to release sulfur trioxide, and history of accidents.

**Table F -2. List of Regulated Toxic Substances and Threshold Quantities
for Accidental Release Prevention [CAS Number Order - 77 Substances]**

CAS No	Chemical Name	Threshold Quantity (lbs)	Basis for Listing
50-00-0	Formaldehyde (solution)	15,000	b
57-14-7	1,1-Dimethylhydrazine [Hydrazine, 1,1-dimethyl-]	15,000	b
60-34-4	Methyl hydrazine [Hydrazine, methyl-]	15,000	b
67-66-3	Chloroform [Methane, trichloro-]	20,000	b
74-87-3	Methyl chloride [Methane, chloro-]	10,000	a
74-90-8	Hydrocyanic acid	2,500	a, b
74-93-1	Methyl mercaptan [Methanethiol]	10,000	b
75-15-0	Carbon disulfide	20,000	b
75-21-8	Ethylene oxide [Oxirane]	10,000	a, b
75-44-5	Phosgene [Carbonic dichloride]	500	a, b
75-55-8	Propyleneimine [Aziridine, 2-methyl-]	10,000	b
75-56-9	Propylene oxide [Oxirane, methyl-]	10,000	b
75-74-1	Tetramethyllead [Plumbane, tetramethyl-]	10,000	b
75-77-4	Trimethylchlorosilane [Silane, chlorotrimethyl-]	10,000	b
75-78-5	Dimethyldichlorosilane [Silane, dichlorodimethyl-]	5,000	b
75-79-6	Methyltrichlorosilane [Silane, trichloromethyl-]	5,000	b
78-82-0	Isobutyronitrile [Propanenitrile, 2-methyl-]	20,000	b
79-21-0	Peracetic acid [Ethaneperoxoic acid]	10,000	b
79-22-1	Methyl chloroformate [Carbonochloridic acid, methylester]	5,000	b
91-08-7	Toluene 2,6-diisocyanate [Benzene, 1,3-diisocyanato-2-methyl-] ¹	10,000	a
106-89-8	Epichlorohydrin [Oxirane, (chloromethyl)-]	20,000	b
107-02-8	Acrolein [2-Propenal]	5,000	b
107-11-9	Allylamine [2-Propen-1-amine]	10,000	b
107-12-0	Propionitrile [Propanenitrile]	10,000	b
107-13-1	Acrylonitrile [2-Propenenitrile]	20,000	b
107-15-3	Ethylenediamine [1,2-Ethanediamine]	20,000	b
107-18-6	Allyl alcohol [2-Propen-1-ol]	15,000	b
107-30-2	Chloromethyl methyl ether [Methane, chloromethoxy-]	5,000	b
108-05-4	Vinyl acetate monomer [Acetic acid ethenyl ester]	15,000	b
108-23-6	Isopropyl chloroformate [Carbonochloridic acid, 1-methylethyl ester]	15,000	b
108-91-8	Cyclohexylamine [Cyclohexanamine]	15,000	b
109-61-5	Propyl chloroformate [Carbonochloridic acid, propylester]	15,000	b
110-00-9	Furan	5,000	b
110-89-4	Piperidine	15,000	b
123-73-9	Crotonaldehyde, (E)- [2-Butenal, (E)-]	20,000	b
126-98-7	Methacrylonitrile [2-Propenenitrile, 2-methyl-]	10,000	b
151-56-4	Ethyleneimine [Aziridine]	10,000	b
302-01-2	Hydrazine	15,000	b
353-42-4	Boron trifluoride compound with methyl ether (1:1) [Boron, trifluoro[oxybis[methane]]-, T-4-	15,000	b
506-77-4	Cyanogen chloride	10,000	c
509-14-8	Tetranitromethane [Methane, tetranitro-]	10,000	b
542-88-1	Chloromethyl ether [Methane, oxybis[chloro-]	1,000	b
556-64-9	Methyl thiocyanate [Thiocyanic acid, methyl ester]	20,000	b

Table F -2. List of Regulated Toxic Substances and Threshold Quantities for Accidental Release Prevention [CAS Number Order - 77 Substances]

CAS No	Chemical Name	Threshold Quantity (lbs)	Basis for Listing
584-84-9	Toluene 2,4-diisocyanate [Benzene, 2,4-diisocyanate-1-methyl-] ¹	10,000	a
594-42-3	Perchloromethylmercaptan [Methanesulfenyl chloride, trichloro-]	10,000	b
624-83-9	Methyl isocyanate [Methane, isocyanato-]	10,000	a, b
814-68-6	Acrylyl chloride [2-Propenoyl chloride]	5,000	b
4170-30-3	Crotonaldehyde [2-Butenal]	20,000	b
7446-09-5	Sulfur dioxide (anhydrous)	5,000	a, b
7446-11-9	Sulfur trioxide	10,000	a, b
7550-45-0	Titanium tetrachloride [Titanium chloride (TiCl ₄) (T-4)-]	2,500	b
7637-07-2	Boron trifluoride [Borane, trifluoro-]	5,000	b
7647-01-0	Hydrochloric acid (conc 37% or greater)	15,000	d
7647-01-0	Hydrogen chloride (anhydrous) [Hydrochloric acid]	5,000	a
7664-39-3	Hydrogen fluoride/Hydrofluoric acid (conc 50% or greater) [Hydrofluoric acid]	1,000	a, b
7664-41-7	Ammonia (anhydrous)	10,000	a, b
7664-41-7	Ammonia (conc 20% or greater)	20,000	a, b
7697-37-2	Nitric acid (conc 80% or greater)	15,000	b
7719-12-2	Phosphorus trichloride [Phosphorous trichloride]	15,000	b
7726-95-6	Bromine	10,000	a, b
7782-41-4	Fluorine	1,000	b
7782-50-5	Chlorine	2,500	a, b
7783-06-4	Hydrogen sulfide	10,000	a, b
7783-07-5	Hydrogen selenide	500	b
7783-60-0	Sulfur tetrafluoride [Sulfur fluoride (SF ₄), (T-4)-]	2,500	b
7784-34-1	Arsenous trichloride	15,000	b
7784-42-1	Arsine	1,000	b
7803-51-2	Phosphine	5,000	b
8014-95-7	Oleum (Fuming Sulfuric acid) [Sulfuric acid, mixture with sulfur trioxide] ¹	10,000	e
10025-87-3	Phosphorus oxychloride [Phosphoryl chloride]	5,000	b
10049-04-4	Chlorine dioxide [Chlorine oxide (ClO ₂)]	1,000	c
10102-43-9	Nitric oxide [Nitrogen oxide (NO)]	10,000	b
10294-34-5	Boron trichloride [Borane, trichloro-]	5,000	b
13463-39-3	Nickel carbonyl	1,000	b
13463-40-6	Iron, pentacarbonyl- [Iron carbonyl (Fe(CO) ₅), (TB-5-11)-]	2,500	b
19287-45-7	Diborane	2,500	b
26471-62-5	Toluene diisocyanate (unspecified isomer) [Benzene, 1,3-diisocyanatomethyl-] ¹	10,000	a

¹ The mixture exemption in §68.115(b)(1) does not apply to the substance.

Note: Basis for Listing:

^a Mandated for listing by Congress.

^b On EHS list, vapor pressure 10 mmHg or greater.

^c Toxic gas.

^d Toxicity of hydrogen chloride, potential to release hydrogen chloride, and history of accidents.

^e Toxicity of sulfur trioxide and sulfuric acid, potential to release sulfur trioxide, and history of accidents.

**Table F-3. List of Regulated Flammable Substances¹ and Threshold Quantities
for Accidental Release Prevention [Alphabetical Order - 63 Substances]**

Chemical Name	CAS No	Threshold Quantity (lbs)	Basis for Listing
Acetaldehyde	75-07-0	10,000	g
Acetylene [Ethyne]	74-86-2	10,000	f
Bromotrifluoroethylene [Ethene, bromotrifluoro-]	598-73-2	10,000	f
1,3-Butadiene	106-99-0	10,000	f
Butane	106-97-8	10,000	f
1-Butene	106-98-9	10,000	f
2-Butene	107-01-7	10,000	f
Butene	25167-67-3	10,000	f
2-Butene-cis	590-18-1	10,000	f
2-Butene-trans [2-Butene, (E)]	624-64-6	10,000	f
Carbon oxysulfide [Carbon oxide sulfide (COS)]	463-58-1	10,000	f
Chlorine monoxide [Chlorine oxide]	7791-21-1	10,000	f
2-Chloropropylene [1-Propene, 2-chloro-]	557-98-2	10,000	g
1-Chloropropylene [1-Propene, 1-chloro-]	590-21-6	10,000	g
Cyanogen [Ethanedinitrile]	460-19-5	10,000	f
Cyclopropane	75-19-4	10,000	f
Dichlorosilane [Silane, dichloro-]	4109-96-0	10,000	f
Difluoroethane [Ethane, 1,1-difluoro-]	75-37-6	10,000	f
Dimethylamine [Methanamine, N-methyl-]	124-40-3	10,000	f
2,2-Dimethylpropane [Propane, 2,2-dimethyl-]	463-82-1	10,000	f
Ethane	74-84-0	10,000	f
Ethyl acetylene [1-Butyne]	107-00-6	10,000	f
Ethylamine [Ethanamine]	75-04-7	10,000	f
Ethyl chloride [Ethane, chloro-]	75-00-3	10,000	f
Ethylene [Ethene]	74-85-1	10,000	f
Ethyl ether [Ethane, 1,1'-oxybis-]	60-29-7	10,000	g
Ethyl mercaptan [Ethanethiol]	75-08-1	10,000	g
Ethyl nitrite [Nitrous acid, ethyl ester]	109-95-5	10,000	f
Hydrogen	1333-74-0	10,000	f
Isobutane [Propane, 2-methyl]	75-28-5	10,000	f
Isopentane [Butane, 2-methyl-]	78-78-4	10,000	g
Isoprene [1,3-Butadiene, 2-methyl-]	78-79-5	10,000	g
Isopropylamine [2-Propanamine]	75-31-0	10,000	g
Isopropyl chloride [Propane, 2-chloro-]	75-29-6	10,000	g
Methane	74-82-8	10,000	f
Methylamine [Methanamine]	74-89-5	10,000	f
3-Methyl-1-butene	563-45-1	10,000	f
2-Methyl-1-butene	563-46-2	10,000	g
Methyl ether [Methane, oxybis-]	115-10-6	10,000	f
Methyl formate [Formic acid, methyl ester]	107-31-3	10,000	g
2-Methylpropene [1-Propene, 2-methyl-]	115-11-7	10,000	f
1,3-Pentadiene	504-60-9	10,000	f
Pentane	109-66-0	10,000	g
1-Pentene	109-67-1	10,000	g
2-Pentene, (E)-	646-04-8	10,000	g
2-Pentene, (Z)-	627-20-3	10,000	g

**Table F-3. List of Regulated Flammable Substances¹ and Threshold Quantities
for Accidental Release Prevention [Alphabetical Order - 63 Substances]**

Chemical Name	CAS No	Threshold Quantity (lbs)	Basis for Listing
Propadiene [1,2-Propadiene]	463-49-0	10,000	f
Propane	74-98-6	10,000	f
Propylene [1-Propene]	115-07-1	10,000	f
Propyne [1-Propyne]	74-99-7	10,000	f
Silane	7803-62-5	10,000	f
Tetrafluoroethylene [Ethene, tetrafluoro-]	116-14-3	10,000	f
Tetramethylsilane [Silane, tetramethyl-]	75-76-3	10,000	g
Trichlorosilane [Silane, trichloro-]	10025-78-2	10,000	g
Trifluorochloroethylene [Ethene, chlorotrifluoro-]	79-38-9	10,000	f
Trimethylamine [Methanamine, N,N-dimethyl-]	75-50-3	10,000	f
Vinyl acetylene [1-Buten-3-yne]	689-97-4	10,000	f
Vinyl chloride [Ethene, chloro-]	75-01-4	10,000	a, f
Vinyl ethyl ether [Ethene, ethoxy-]	109-92-2	10,000	g
Vinyl fluoride [Ethene, fluoro-]	75-02-5	10,000	f
Vinylidene chloride [Ethene, 1,1-dichloro-]	75-35-4	10,000	g
Vinylidene fluoride [Ethene, 1,1-difluoro-]	75-38-7	10,000	f
Vinyl methyl ether [Ethene, methoxy-]	107-25-5	10,000	f

¹A flammable substance when used as a fuel or held for sale as a fuel at a retail facility is excluded from all provisions of this part (see § 68.126).

Note: Basis for Listing:

^a Mandated for listing by Congress.

^f Flammable gas.

^g Volatile flammable liquid.

Table F-4. List of Regulated Flammable Substances¹ and Threshold Quantities for Accidental Release Prevention [CAS Number Order - 63 Substances]

CAS No.	Chemical Name	Threshold Quantity (lbs)	Basis for Listing
60-29-7	Ethyl ether [Ethane, 1,1'-oxybis-]	10,000	g
74-82-8	Methane	10,000	f
74-84-0	Ethane	10,000	f
74-85-1	Ethylene [Ethene]	10,000	f
74-86-2	Acetylene [Ethyne]	10,000	f
74-89-5	Methylamine [Methanamine]	10,000	f
74-98-6	Propane	10,000	f
74-99-7	Propyne [1-Propyne]	10,000	f
75-00-3	Ethyl chloride [Ethane, chloro-]	10,000	f
75-01-4	Vinyl chloride [Ethene, chloro-]	10,000	a, f
75-02-5	Vinyl fluoride [Ethene, fluoro-]	10,000	f
75-04-7	Ethylamine [Ethanamine]	10,000	f
75-07-0	Acetaldehyde	10,000	g
75-08-1	Ethyl mercaptan [Ethanethiol]	10,000	g
75-19-4	Cyclopropane	10,000	f
75-28-5	Isobutane [Propane, 2-methyl]	10,000	f
75-29-6	Isopropyl chloride [Propane, 2-chloro-]	10,000	g
75-31-0	Isopropylamine [2-Propanamine]	10,000	g
75-35-4	Vinylidene chloride [Ethene, 1,1-dichloro-]	10,000	g
75-37-6	Difluoroethane [Ethane, 1,1-difluoro-]	10,000	f
75-38-7	Vinylidene fluoride [Ethene, 1,1-difluoro-]	10,000	f
75-50-3	Trimethylamine [Methanamine, N,N-dimethyl-]	10,000	f
75-76-3	Tetramethylsilane [Silane, tetramethyl-]	10,000	g
78-78-4	Isopentane [Butane, 2-methyl-]	10,000	g
78-79-5	Isoprene [1,3-Butadiene, 2-methyl-]	10,000	g
79-38-9	Trifluorochloroethylene [Ethene, chlorotrifluoro-]	10,000	f
106-97-8	Butane	10,000	f
106-98-9	1-Butene	10,000	f
106-99-0	1,3-Butadiene	10,000	f
107-00-6	Ethyl acetylene [1-Butyne]	10,000	f
107-01-7	2-Butene	10,000	f
107-25-5	Vinyl methyl ether [Ethene, methoxy-]	10,000	f
107-31-3	Methyl formate [Formic acid, methyl ester]	10,000	g
109-66-0	Pentane	10,000	g
109-67-1	1-Pentene	10,000	g
109-92-2	Vinyl ethyl ether [Ethene, ethoxy-]	10,000	g
109-95-5	Ethyl nitrite [Nitrous acid, ethyl ester]	10,000	f
115-07-1	Propylene [1-Propene]	10,000	f
115-10-6	Methyl ether [Methane, oxybis-]	10,000	f
115-11-7	2-Methylpropene [1-Propene, 2-methyl-]	10,000	f
116-14-3	Tetrafluoroethylene [Ethene, tetrafluoro-]	10,000	f
124-40-3	Dimethylamine [Methanamine, N-methyl-]	10,000	f
460-19-5	Cyanogen [Ethanedinitrile]	10,000	f
463-49-0	Propadiene [1,2-Propadiene]	10,000	f
463-58-1	Carbon oxysulfide [Carbon oxide sulfide (COS)]	10,000	f
463-82-1	2,2-Dimethylpropane [Propane, 2,2-dimethyl-]	10,000	f

**Table F-4. List of Regulated Flammable Substances¹ and Threshold Quantities
for Accidental Release Prevention [CAS Number Order - 63 Substances]**

CAS No.	Chemical Name	Threshold Quantity (lbs)	Basis for Listing
504-60-9	1,3-Pentadiene	10,000	f
557-98-2	2-Chloropropylene [1-Propene, 2-chloro-]	10,000	g
563-45-1	3-Methyl-1-butene	10,000	f
563-46-2	2-Methyl-1-butene	10,000	g
590-18-1	2-Butene-cis	10,000	f
590-21-6	1-Chloropropylene [1-Propene, 1-chloro-]	10,000	g
598-73-2	Bromotrifluorethylene [Ethene, bromotrifluoro-]	10,000	f
624-64-6	2-Butene-trans [2-Butene, (E)]	10,000	f
627-20-3	2-Pentene, (Z)-	10,000	g
646-04-8	2-Pentene, (E)-	10,000	g
689-97-4	Vinyl acetylene [1-Buten-3-yne]	10,000	f
1333-74-0	Hydrogen	10,000	f
4109-96-0	Dichlorosilane [Silane, dichloro-]	10,000	f
7791-21-1	Chlorine monoxide [Chlorine oxide]	10,000	f
7803-62-5	Silane	10,000	f
10025-78-2	Trichlorosilane [Silane, trichloro-]	10,000	g
25167-67-3	Butene	10,000	f

¹A flammable substance when used as a fuel or held for sale as a fuel at a retail facility is excluded from all provisions of this part (see § 68.126).

Note: Basis for Listing:

^a Mandated for listing by Congress.

^f Flammable gas.

^g Volatile flammable liquid.

**Table G. Synthetic Organic Chemical Manufacturing Industry (SOCMI) Chemicals
(40 CFR Part 63, Subpart F)**

Chemical Name ^a	CAS Number ^b	Chemical Name ^a	CAS Number ^b
Acenaphthene	83329	Bisphenol A	80057
Acetal	105577	Bis(Chloromethyl)Ether	542881
Acetaldehyde	75070	Bromobenzene	108861
Acetaldehyde	107891	Bromoform	75252
Acetamide	60355	Bromonaphthalene	27497514
Acetanilide	103844	Butadiene (1,3-)	106990
Acetic acid	64197	Butanediol (1,4-)	110634
Acetic anhydride	108247	Butyl acrylate (n-)	141322
Acetoacetanilide	102012	Butylene glycol (1,3-)	107880
Acetone	67641	Butyrolactone	96480
Acetone cyanohydrin	75865	Caprolactam	105602
Acetonitrile	75058	Carbaryl	63252
Acetophenone	98862	Carbazole	86748
Acrolein	107028	Carbon disulfide	75150
Acrylamide	79061	Carbon tetrabromide	558134
Acrylic acid	79107	Carbon tetrachloride	56235
Acrylonitrile	107131	Carbon tetrafluoride	75730
Adiponitrile	111693	Chloral	75876
Alizarin	72480	Chloroacetic acid	79118
Alkyl anthraquinones	008	Chloroacetophenone (2-)	532274
Allyl alcohol	107186	Chloroaniline (p-)	106478
Allyl chloride	107051	Chlorobenzene	108907
Allyl cyanide	109751	2-Chloro-1,3-butadiene (Chloroprene)	126998
Aminophenol sulfonic acid	0010	Chlorodifluoroethane	25497294
Aminophenol (p-)	123308	Chlorodifluoromethane	75456
Aniline	62533	Chloroform	67663
Aniline hydrochloride	142041	Chloronaphthalene	25586430
Anisidine (o-)	90040	Chloronitrobenzene (m-)	121733
Anthracene	120127	Chloronitrobenzene (o-)	88733
Anthraquinone	84651	Chloronitrobenzene (p-)	100005
Azobenzene	103333	Chlorophenol (m-)	108430
Benzaldehyde	100527	Chlorophenol (o-)	95578
Benzene	71432	Chlorophenol (p-)	106489
Benzenedisulfonic acid	98486	Chlorotoluene (m-)	108418
Benzenesulfonic acid	98113	Chlorotoluene (o-)	95498
Benzil	134816	Chlorotoluene (p-)	106434
Benzilic acid	76937	Chlorotrifluoromethane	75729
Benzoic acid	65850	Chrysene	218019
Benzoin	119539	Cresol and cresylic acid (m-)	108394
Benzonitrile	100470	Cresol and cresylic acid (o-)	95487
Benzophenone	119619	Cresol and cresylic acid (p-)	106445
Benzotrichloride	98077	Cresols and cresylic acids (mixed)	1319773
Benzoyl chloride	98884	Cumene	98828
Benzyl acetate	140114	Cumene hydroperoxide	80159
Benzyl alcohol	100516	Cyanoacetic acid	372098
Benzyl benzoate	120514	Cyclohexane	110827
Benzyl chloride	100447	Cyclohexanol	108930
Benzyl dichloride	98873	Cyclohexanone	108941
Biphenyl	92524	Cyclohexylamine	108918

Table G. SOCM Chemicals (Continued)

Chemical Name ^a	CAS Number ^b	Chemical Name ^a	CAS Number ^b
Cyclooctadienes	29965977	Dinitrophenol (2,4-)	51285
Decahydronaphthalene	91178	Dinitrotoluene (2,4-)	121142
Diacetoxy-2-Butene (1,4-)	0012	Dioxane (1,4-) (1,4-Diethyleneoxide)	123911
Diaminophenol hydrochloride	137097	Dioxolane (1,3-)	646060
Dibromomethane	74953	Diphenyl methane	101815
Dichloroaniline (mixed isomers)	27134276	Diphenyl oxide	101848
Dichlorobenzene (p-)	106467	Diphenyl thiourea	102089
Dichlorobenzene (m-)	541731	Diphenylamine	122394
Dichlorobenzene (o-)	95501	Dipropylene glycol	110985
Dichlorobenzidine (3,3'-)	91941	Di-o-tolylguanidine	97392
Dichlorodifluoromethane	75718	Dodecandedioic acid	693232
Dichloroethane (1,2-) (Ethylene dichloride) (EDC)	107062	Dodecyl benzene (branched)	123013
Dichloroethyl ether (bis(2-chloroethyl)ether)	111444	Dodecyl phenol (branched)	121158585
Dichloroethylene (1,2-)	540590	Dodecylaniline	28675174
Dichlorophenol (2,4-)	120832	Dodecylbenzene (n-)	121013
Dichloropropene (1,3-)	542756	Dodecylphenol	27193868
Dichlorotetrafluoroethane	1320372	Epichlorohydrin (1-chloro-2,3-epoxypropane)	106898
Dichloro-1-butene (3,4-)	760236	Ethanolamine	141435
Dichloro-2-butene (1,4-)	764410	Ethyl acrylate	140885
Diethanolamine (2,2'-Iminodiethanol)	111422	Ethylbenzene	100414
Diethyl sulfate	64675	Ethyl chloride (Chloroethane)	75003
Diethylamine	109897	Ethyl chloroacetate	105395
Diethylaniline (2,6-)	579668	Ethylamine	75047
Diethylene glycol	111466	Ethylaniline (N-)	103695
Diethylene glycol dibutyl ether	112732	Ethylaniline (o-)	578541
Diethylene glycol diethyl ether	112367	Ethylcellulose	9004573
Diethylene glycol dimethyl ether	111966	Ethylcyanoacetate	105566
Diethylene glycol monobutyl ether acetate	124174	Ethylene carbonate	96491
Diethylene glycol monobutyl ether	112345	Ethylene dibromide (Dibromoethane)	106934
Diethylene glycol monoethyl ether acetate	112152	Ethylene glycol	107211
Diethylene glycol monoethyl ether	111900	Ethylene glycol diacetate	111557
Diethylene glycol monohexyl ether	112594	Ethylene glycol dibutyl ether	112481
Diethylene glycol monomethyl ether acetate	629389	Ethylene glycol diethyl ether (1,2-diethoxyethane)	629141
Diethylene glycol monomethyl ether	111773	Ethylene glycol dimethyl ether	110714
Dihydroxybenzoic acid (Resorcylic acid)	27138574	Ethylene glycol monoacetate	542596
Dimethylbenzidine (3,3'-)	119937	Ethylene glycol monobutyl ether acetate	112072
Dimethyl ether (Methyl Ether)	115106	Ethylene glycol monobutyl ether	111762
Dimethylformamide (N,N-)	68122	Ethylene glycol monoethyl ether acetate	111159
Dimethylhydrazine (1,1-)	57147	Ethylene glycol monoethyl ether	110805
Dimethyl sulfate	77781	Ethylene glycol monohexyl ether	112254
Dimethyl terephthalate	120616	Ethylene glycol monomethyl ether acetate	110496
Dimethylamine	124403	Ethylene glycol monomethyl ether	109864
Dimethylaminoethanol (2-)	108010	Ethylene glycol monoethyl ether	002
Dimethylaniline (N,N)	121697	Ethylene glycol monophenyl ether	122996
Dinitrobenzenes (NOS) ^c	25154545	Ethylene glycol monopropyl ether	2807309

Table G. SOCM Chemicals (Continued)

Chemical Name ^a	CAS Number ^b	Chemical Name ^a	CAS Number ^b
Ethylene oxide	75218	Methyl mercaptan	74931
Ethylenediamine	107153	Methyl methacrylate	80626
Ethylenediamine tetraacetic acid	60004	Methyl phenyl carbinol	98851
Ethylenimine (Aziridine)	151564	Methyl tert-butyl ether	1634044
Ethylhexyl acrylate (2-isomer)	103117	Methylamine	74895
Fluoranthene	206440	Methylaniline (N-)	100618
Formaldehyde	50000	Methylcyclohexane	108872
Formamide	75127	Methylcyclohexanol	25639423
Formic acid	64186	Methylcyclohexanone	1331222
Fumaric acid	110178	Methylene chloride (Dichloromethane)	75092
Glutaraldehyde	111308	Methylene dianiline (4,4'-isomer)	101779
Glyceraldehyde	367475	Methylene diphenyl diisocyanate (4,4'- (MDI)	101688
Glycerol	56815	Methylenionones (a-)	79696
Glycerol tri(polyoxypropylene)ether	25791962	Methylpentynol	77758
Glycine	56406	Methylstyrene (a-)	98839
Glyoxal	107222	Naphthalene	91203
Hexachlorobenzene	118741	Naphthalene sulfonic acid (a-)	85472
Hexachlorobutadiene	87683	Naphthalene sulfonic acid (b-)	120183
Hexachloroethane	67721	Naphthol (a-)	90153
Hexadiene (1,4-)	592450	Naphthol (b-)	135193
Hexamethylenetetramine	100970	Naphtholsulfonic acid (1-)	567180
Hexane	110543	Naphthylamine sulfonic acid (1,4-)	84866
Hexanetriol (1,2,6-)	106694	Naphthylamine sulfonic acid (2,1-)	81163
Hydroquinone	123319	Naphthylamine (1-)	134327
Hydroxyadipaldehyde	141311	Naphthylamine (2-)	91598
Isobutyl acrylate	106638	Nitroaniline (m-)	99092
Isobutylene	115117	Nitroaniline (o-)	88744
Isophorone	78591	Nitroanisole (o-)	91236
Isophorone nitrile	0017	Nitroanisole (p-)	100174
Isophthalic acid	121915	Nitrobenzene	98953
Isopropylphenol	25168063	Nitronaphthalene (1-)	86577
Linear alkylbenzene	...d	Nitrophenol (p-)	100027
Maleic anhydride	108316	Nitrophenol (o-)	88755
Maleic hydrazide	123331	Nitropropane (2-)	79469
Malic acid	6915157	Nitrotoluene (all isomers)	1321126
Metanilic acid	121471	Nitrotoluene (o-)	88722
Methacrylic acid	79414	Nitrotoluene (m-)	99081
Methanol	67561	Nitrotoluene (p-)	99990
Methionine	63683	Nitroxyline	25168041
Methyl acetate	79209	Nonylbenzene (branched)	1081772
Methyl acrylate	96333	Nonylphenol	25154523
Methyl bromide (Bromomethane)	74839	Octene-1	111660
Methyl chloride (Chloromethane)	74873	Octylphenol	27193288
Methyl ethyl ketone (2-butanone)	78933	Paraformaldehyde	30525894
Methyl formate	107313	Paraldehyde	123637
Methyl hydrazine	60344	Pentachlorophenol	87865
Methyl isobutyl carbinol	108112	Pentaerythritol	115775
Methyl isobutyl ketone (Hexone)	108101	Peracetic acid	79210
Methyl isocyanate	624839	Perchloromethyl mercaptan	594423

Table G. SOCM Chemicals (Continued)

Chemical Name ^a	CAS Number ^b	Chemical Name ^a	CAS Number ^b
Phenanthrene	85018	Tetraethylenepentamine	112572
Phenetidine (p-)	156434	Tetrahydrofuran	109999
Phenol	108952	Tetrahydronaphthalene	119642
Phenolphthalein	77098	Tetrahydrophthalic anhydride	85438
Phenolsulfonic acids (all isomers)	1333397	Tetramethylenediamine	110601
Phenyl anthranilic acid (all isomers)	91407	Tetramethylethylenediamine	110189
Phenylenediamine (p-)	106503	Tetramethyllead	75741
Phloroglucinol	108736	Thiocarbamide	102089
Phosgene	75445	Toluene	108883
Phthalic acid	88993	Toluene 2,4 diamine	95807
Phthalic anhydride	85449	Toluene 2,4 diisocyanate	584849
Phthalimide	85416	Toluene diisocyanates (mixture)	26471625
Phthalonitrile	91156	Toluene sulfonic acids	104154
Picoline (b-)	108996	Toluenesulfonyl chloride	98599
Piperazine	110850	Toluidine (o-)	95534
Polyethylene glycol	25322683	Trichloroaniline (2,4,6-)	634935
Polypropylene glycol	25322694	Trichlorobenzene (1,2,3-)	87616
Propiolactone (beta-)	57578	Trichlorobenzene (1,2,4-)	120821
Propionaldehyde	123386	Trichloroethane (1,1,1-)	71556
Propionic acid	79094	Trichloroethane (1,1,2-) (Vinyl trichloride)	79005
Propylene carbonate	108327	Trichloroethylene	79016
Propylene dichloride (1,2-dichloropropane)	78875	Trichlorofluoromethane	75694
Propylene glycol	57556	Trichlorophenol (2,4,5-)	95954
Propylene glycol monomethyl ether	107982	(1,1,2-) Trichloro (1,2,2-) trifluoroethane	76131
Propylene oxide	75569	Triethanolamine	102716
Pyrene	129000	Triethylamine	121448
Pyridine	110861	Triethylene glycol	112276
p-tert -Butyl toluene	98511	Triethylene glycol dimethyl ether	112492
Quinone	106514	Triethylene glycol monoethyl ether	112505
Resorcinol	108463	Triethylene glycol monomethyl ether	112356
Salicylic acid	69727	Trimethylamine	75503
Sodium methoxide	124414	Trimethylcyclohexanol	933482
Sodium phenate	139026	Trimethylcyclohexanone	2408379
Stilbene	588590	Trimethylcyclohexylamine	34216347
Styrene	100425	Trimethylolpropane	77996
Succinic acid	110156	Trimethylpentane (2,2,4-)	540841
Succinonitrile	110612	Tripolyethylene glycol	24800440
Sulfanilic acid	121573	Vinyl acetate	108054
Sulfolane	126330	Vinyl chloride (Chloroethylene)	75014
Tartaric acid	526830	Vinyl toluene	25013154
Terephthalic acid	100210	Vinylcyclohexene (4-)	100403
Tetrabromophthalic anhydride	632791	Vinylidene chloride	75354
Tetrachlorobenzene (1,2,4,5-)	95943	(1,1-dichloroethylene)	
Tetrachloroethane (1,1,2,2-)	79345	Vinyl(N-)-pyrrolidone(2-)	88120
Tetrachloroethylene (Perchloroethylene)	127184	Xanthates	140896
Tetrachlorophthalic anhydride	117088	Xylene sulfonic acid	25321419
Tetraethyl lead	78002	Xylenes (NOS) ^c	1330207
Tetraethylene glycol	112607	Xylene (m-)	108383
		Xylene (o-)	95476

Table G. SOCM Chemicals (Continued)

Chemical Name ^a	CAS Number ^b	Chemical Name ^a	CAS Number ^b
Xylene (p-)	106423	Xyldene	1300738
Xylenols (Mixed)	1300716		

^a Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.

^b CAS Number = Chemical Abstract Service number.

^c NOS = not otherwise specified.

^d No CAS number assigned.

**Table H. Organic Hazardous Air Pollutants
(40 CFR Part 63, Subpart F)**

Chemical Name ^{a,b}	CAS Number ^c	Chemical Name ^{a,b}	CAS Number ^c
Acenaaphthene	83329	Ethylene oxide	75218
Acetaldehyde	75070	Ethylidene dichloride (1,1-Dichloroethane)	75343
Acetamide	60355	Fluoranthene	206440
Acetonitrile	75058	Formaldehyde	50000
Acetophenone	98862		
		Glycol ethers ^d	
Acrolein	107028	Hexachlorobenzene	118741
Acrylamide	79061	Hexachlorobutadiene	87683
Acrylic acid	79107	Hexachloroethane	67721
Acrylonitrile	107131	Hexane	110543
Alizarin	72480	Hydroquinone	123319
Allyl chloride	107051	Isophorone	78591
Aniline	62533	Maleic anhydride	108316
Anisidine (o-)	90040	Methanol	67561
Anthracene	120127	Methyl bromide (Bromomethane)	74839
Anthraquinone	84651	Methyl chloride (Chloromethane)	74873
Benzene	71432	Methyl ethyl ketone (2-Butanone)	78933
Benzotrachloride	98077	Methyl hydrazine	60344
Benzyl chloride	100447	Methyl isobutyl ketone (Hexone)	108101
Biphenyl	92524	Methyl isocyanate	624839
Bis(chloromethyl)ether	542881	Methyl methacrylate	80626
Bromoform	75252	Methyl tert-butyl ether	1634044
Bromonaphthalene	27497514	Methylene chloride (Dichloromethane)	75092
Butadiene (1,3-)	106990	Methylene diphenyl diisocyanate (4,4'-) (MDI)	101688
Carbon disulfide	75150	Methylenedianiline (4,4'-)	101779
Carbon tetrachloride	56235	Naphthalene	91203
Chloroacetic acid	79118	Naphthalene sulfonic acid (a)	85472
Chloroacetophenone (2-)	532274	Naphthalene sulfonic acid (ß)	120183
Chlorobenzene	108907	Naphthol (a)	90153
2-Chloro-1,3-butadiene (Chloroprene)	126998	Naphthol (ß)	135193
Chloroform	67663	Naphtholsulfonic acid (1-)	567180
Chloronaphthalene	25586430	Naphthylamine sulfonic acid (1,4-)	84866
Chrysene	218019	Naphthylamine sulfonic acid (2,1-)	81163
Cresols and cresylic acids (mixed)	1319773	Naphthylamine (1-)	134327
Cresol and cresylic acid (o-)	95487	Naphthylamine (2-)	91598
Cresol and cresylic acid (m-)	108394	Nitronaphthalene (1-)	86577
Cresol and cresylic acid (p-)	106445	Nitrobenzene	98953
Cumene	98828	Nitrophenol (p-)	100027
Dichlorobenzene (p-)	106467	Nitropropane (2-)	79469
Dichlorobenzidine (3,3'-)	91941	Phenanthrene	85018
Dichloroethane (1,2-) (Ethylene dichloride) (EDC)	107062	Phenol	108952
Dichloroethyl ether (Bis(2-chloroethyl)ether)	111444	Phenylenediamine (p-)	106503
Dichloropropene (1,3-)	542756	Phosgene	75445
Diethanolamine (2,2-Iminodiethanol)	111422	Phthalic anhydride	85449
Dimethylaniline (N,N-)	121697	Propiolactone (beta-)	57578
Diethyl sulfate	64675	Propionaldehyde	123386
Dimethylbenzidine (3,3'-)	119937	Propylene dichloride (1,2-Dichloropropane)	78875
Dimethylformamide (N,N-)	68122	Propylene oxide	75569
Dimethylhydrazine (1,1-)	57147	Pyrene	129000
Dinitrophenol (2,4-)	51285	Quinone	106514
Dinitrotoluene (2,4-)	121142	Styrene	100425
Dioxane (1,4-) (1,4-Diethyleneoxide)	123911	Tetrachloroethane (1,1,2,2-)	79345
1,2-Diphenylhydrazine	122667	Tetrachloroethylene (Perchloroethylene)	127184
Epichlorohydrin (1-Chloro-2,3-epoxypropane)	106898	Tetrahydronaphthalene	119642
Ethyl acrylate	140885	Toluene	108883
Ethylbenzene	100414	Toluene diamine (2,4-)	95807
Ethyl chloride (Chloroethane)	75003	Toluene diisocyanate (2,4-)	584849
Ethylene dibromide (Dibromoethane)	106934	Toluidine (o-)	95534
Ethylene glycol	107211	Trichlorobenzene (1,2,4-)	120821
		Trichloroethane (1,1,1-) (Methyl chloroform)	71556

Chemical Name ^{a,b}	CAS Number ^c

Chemical Name ^{a,b}	CAS Number ^c
Trichloroethane (1,1,2-) (Vinyl trichloride)	79005
Trichloroethylene	79016
Trichlorophenol (2,4,5-)	95954
Triethylamine	121448
Trimethylpentane (2,2,4-)	540841
Vinyl acetate	108054
Vinyl chloride (chloroethylene)	75014
Vinylidene chloride (1,1-Dichloroethylene)	75354
Xylenes (NOS)	1330207
Xylene (m-)	108383
Xylene (o-)	95476
Xylene (p-)	106423

Table H. Organic Hazardous Air Pollutants (Notes)

- ^a For all listings above containing the word "Compounds," the following applies: Unless otherwise specified, these listings are defined as including any unique chemical substance that contains the named chemical (i.e., antimony, arsenic) as part of that chemical's infrastructure.
- ^b Isomer means all structural arrangements for the same number of atoms of each element and does not mean salts, esters, or derivatives.
- ^c CAS Number = Chemical Abstract Service number.
- ^d Includes mono- and di- ethers of ethylene glycol, diethylene glycol, and triethylene glycol $R-(OCH_2CH_2)_n-OR'$ where
 $n = 1, 2, \text{ or } 3$;
 $R = \text{alkyl or aryl groups; and}$
 $R' = R, H, \text{ or groups which, when removed, yield glycol ethers with the structure: } R-(OCH_2CH_2)_n-OH$
 Polymers are excluded from the glycol category.

Table I. National Emission Standards for Hazardous Air Pollutants

Pollutant	Facility or Emission Unit Type	40 CFR 61 Subpart
Radon	Underground uranium mines; Department of Energy facilities, phosphorus fertilizer plants; and facilities processing or disposing of uranium ore and tailings.	B, Q, R, T, W
Beryllium	Beryllium extraction plants, ceramic plants, foundries, incinerators, propellant plants, machine shops that process beryllium containing material; and rocket motor firing test sites.	C, D
Mercury	Mercury ore processing; Manufacturing processes using mercury chloralkali cells; and sludge incinerators.	E
Vinyl Chloride	Ethylene dichloride manufacturing via oxygen, HCL and ethylene; vinyl chloride manufacturing; and polyvinyl chloride manufacturing.	F
Radionuclides	Department of Energy; Nuclear Regulatory Commission licensed facilities; other federal facilities; and elemental phosphorus plants.	H, I, K
Benzene	Fugitive process, storage, and transfer equipment leaks; coke by-product recovery plants; benzene storage vessels; benzene transfer operations; benzene waste operations.	J, L, Y, BB, FF
Asbestos*	Asbestos mills; roadway surfacing with asbestos tailings; manufacture of products containing asbestos; demolition; renovation; and spraying and disposal of asbestos waste.	M
Inorganic Arsenic	Glass manufacturer; primary copper smelter; arsenic trioxide and metallic arsenic production facilities.	N, O, P
Volatile Hazardous Air Pollutants (VHAP)	Pumps; compressors, pressure relief devices, connections, valves, lines, flanges, product accumulator vessels, etc. in VHAP service.	V